

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

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Founder and Editor: STANLEY SPOONER

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EDITORIAL COMMENT



The Next "Worth-While" Flight

THE present is an opportune moment for discussing what is likely to be the next "worth-while" flight. Miss Amy Johnson has returned from one very splendid flight. Capt. C. D. Barnard has just accomplished another and very useful flight—to Malta and back in two consecutive days. And R 100 has crossed the Atlantic and moored safely in Canada. Each of these was a "worth-while" flight. Miss Johnson's because, although she did not manage to lower the time taken by Hinkler to reach Australia, it set the whole world, and more particularly the British Empire, talking and thinking flying. Barnard's flight was worth while because in the not very distant future we shall have to operate air mail services properly—which is to say, that we shall use aircraft specifically designed for carrying mails, and mails only, and they will be fast machines capable of covering considerable distances non-stop. One may easily visualise an air mail route to Karachi which calls at Malta, Cairo and Baghdad, and gets the mails to India in very much shorter time than is now taken. Barnard's monoplane was in no sense an air mail machine, but his flight demonstrated that there should be no technical difficulty in producing an aircraft capable of carrying mails to Malta in some 12 to 14 hours. Similar stages over the rest of the route could be flown, which would make it possible to get mails to Karachi in four days without taking into account the speeding-up that would naturally attend the development of night flying. The cruise of R 100 to Canada was worth while, because Great Britain is definitely committed to an airship programme, and because the airship is, as far as can be seen at present, the only type of aircraft which could operate over the long overseas distances with any worth-while pay load. The large flying-boat will have many uses, and will play an extremely important part in Empire aviation, but there is little technical foundation for believing that distances of 3,000 miles or more can

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1930	
Aug. 9-24	Gliding Competitions, Rhön, Germany.
Aug. 15-31	Circuit of Italy.
Aug. 17	Shanklin Meeting.
Aug. 30	Liverpool-Manchester Inter-City Air Race.
Aug. 30	Liverpool Air Display.
Aug. 30	Air Fete, Cramlington, Newcastle-on-Tyne.
Aug. 30	Bedford Club Meeting.
Sept. 1-6	5th International Air Congress at The Hague.
Sept. 6	Opening of Ratcliffe Aerodrome, Leicester.
Sept. 6	Bristol and Wessex Ae.C. Air Display and Garden Party.
Sept. 13	N.F.S. Air Pageant, Tollerton, Nottingham.
Sept. 14	N.F.S. Air Pageant, Leeds.
Sept. 27	N.F.S. Air Meeting, Hanworth.
Nov. 28- Dec. 14	Paris Aero Show.
1932	
May 31	Closing date for Cellon Cross-Channel Glide £1,000 Prize.

be covered without refuelling and still leave a payload likely to make the service a paying one. So the three great flights which occupy the mind of the aviation community just now may be classed as worth-while flights.

There is no standing still in aviation as in everything else. Either we progress or we fall back. And consequently the time has come to look to the useful flights of the immediate future. What are they likely to be, and which of them are likely to be really useful? That we may see many flights yet—successful and otherwise—which may be very spectacular and bring fame (or “publicity”) to those who make them, but which will be of no practical use, seems more than probable. For instance, the crossing of oceans in landplanes. It is to be feared that we have not yet seen the last of these gallant but very foolish attempts. Yet they prove nothing, demonstrate nothing, except the length to which some people will go in order to get their names in the newspapers.

We think it is by now fairly generally agreed that, as FLIGHT has been preaching in and out of season for a very long time, the next step must be towards a serious attack on the problems of air mails. The machines can be produced. Of that there is not the slightest doubt. But before one can usefully set to work on designing an air mail machine it is necessary to know the conditions on the route for which it is intended. Any long-distance air mail line must obviously make use of more than one type of aircraft. Some of the stages will call for landplanes, and others for marine aircraft. Any great flights of the immediate future should, therefore, aim at discovering what is required, what can be done, and what is the best way to set about it.

The London to Karachi section of an air route to Australia has been in operation for a considerable time, and the Directorate of Civil Aviation, as well as Imperial Airways, Limited, must by now know fairly well the technical problems which arise. The route has been variously laid over Italy and over Europe. Either way Great Britain is handicapped by the fact that the goodwill of other nations is an essential condition. A direct Malta-Egypt route would, in this respect, have considerable advantages. From Karachi onwards there is much to be done. A number of flights, starting from Karachi and conveying the mails to Calcutta in the shortest possible time, would be the best imaginable demonstration of the possibilities of saving time by using the air mail. While the London-Karachi section is operated once a week only, there would not be a great deal of advantage in bringing back mails from Calcutta to Karachi to connect with the return flight to England. But by delaying the start from Calcutta until, say, two days before the mail leaves Karachi for England, the overall time from Calcutta to London would be appreciably reduced. Here then there would seem to be an opportunity for some really useful demonstration flights.

Then there is the London-Cape Town route. At present the plans are based on Egypt as the point where the Cape Town line branches off from the England-India route. But it is at least open to argument whether this is necessarily the ultimate air route to the Cape. A very good case could be put up for a west-coast route, with ports of call at Gibraltar and places down the west coast of Africa.

Such a route would obviously be a seaplane route. Apart from the fact that it might well be not only an easier proposition from the point of view of maintenance of aerodromes, but also more suited to commercial considerations, the western route to the Cape would have the advantage of linking up with the transatlantic service to South America, a service which Great Britain ought to be operating, and on which she may still have a chance to get in if prompt action is taken. The future may easily see two distinct main air routes: One *via* Malta and Egypt to India and Australia, with a branch line from Egypt to Kenya, etc.; and the other down the west coast of Africa, with a branch line to South America.

We should welcome a flight to demonstrate the possibilities of a flying-boat service to Gibraltar and onwards. The organisation would not be cheap, and possibly the Air Ministry might consider the advisability of sending a flight of R.A.F. boats on a cruise down the west coast.

❖ ❖ ❖

An easy passage across the Atlantic was what we wished for R 100 on her first oceanic trip. In no experiment does one desire to make the hardest test first. The ideal is for tests to be progressive in difficulty. But it was decreed that

Arrived. R 100 should go through well-nigh the whole gamut of airship tests between Cardington and St. Hubert. First she was disappointed of favouring winds, and had to manoeuvre to get into them. This, perhaps, was no great test of the airship, but it did exercise the ingenuity of the captain and the navigating and meteorological officers, while it goes without saying that everything hung on the efficient functioning of the wireless. All did so very well that one can scarcely refrain from using the word “brilliant.” Our airship personnel may be short of flying practice, but this flight found them wanting in no point of navigation and airmanship. Sqdn.-Ldr. Booth, Sqdn.-Ldr. Johnson, Mr. Giblett, and Mr. Keeley all deserve the heartiest congratulations and praise.

Then, when only 200 miles off the goal, came a mishap. The fabric on the port fin tore. That was distinctly unfortunate, and spoilt the previous excellent time which the airship was making; but it gave a chance to the crew to show their mettle by repairing the rent in two hours while still in the air. A few hours later R 100 was caught in a thunderstorm. She was hurled up from 1,500 to 4,000 ft. That is the sort of experience which is least desired by the best proved airship and the most experienced crew. There had been doubts as to whether the large panels of concave fabric on the hull would stand such a buffeting. With infinite satisfaction we heard that the fabric on the hull suffered not at all. The only damage was a slight rent in the fabric on the starboard fin, which it was not thought worth while to repair while in the air. So, though our hopes that R 100 would have an easy voyage were not granted, we may now feel a confidence in this airship which it would have been premature to feel before. The end of the flight tested R 100 quite as severely as the earlier stages tested the captain and other officers. All have come out of the ordeal with flying colours. Well done, R 100!





CAPTAIN BARNARD'S RETURN. Note that the time is 14 minutes past six.
(FLIGHT Photo.)

ONE of the finest flights of recent times was that made by Captain C. D. Barnard in a de Havilland Puss Moth with Gipsy III engine on July 31-August 1. Barnard set out to attempt to establish a new record by flying non-stop to Malta in a day and return in a non-stop flight the next day, and the attempt was entirely successful.

The machine used by Barnard was the Puss Moth belonging to Arens Controls, Ltd., and was fitted with Arens controls not only of the engine, but of rudder, elevator and ailerons as well. This type of control has obtained a full C. of A. in Germany, but in this country it has not yet been so passed, although the flight will probably result in a full C. of A. being granted.

A large petrol tank had been mounted in the cabin, in the place usually occupied by a passenger,



Home again: Captain Barnard and his wife after the completion of a very fine flight indeed. (FLIGHT Photo.)

so as to increase the range of the machine. The outward journey, accomplished during last Thursday, took 13 hours, and the return journey, completed on Friday last, took 14½ hours, giving a total flying time of 27½ hours for the distance of 2,800 miles. This corresponds to an average speed of 101.8 m.p.h., which is a very good speed over such a distance. During the flight 140 gallons of petrol were used, giving a consumption of 20 miles per gallon. The oil consumption was 2 gallons.

Except for the fact that it is customary to use oil, it would seem that Barnard need not have troubled to carry any!

The comfort which the pilot of a Puss Moth enjoys helped Barnard considerably in making the long flights without undue fatigue. He arrived at Croydon in shirt sleeves, and we believe that was his "flying kit" for the whole trip.



THE END OF THE 2,800 MILES' FLIGHT: Barnard taxis his Puss Moth up to the Customs at Croydon.
(FLIGHT Photo.)



(FLIGHT Photo.)

MISS AMY JOHNSON'S RETURN

A VERY wonderful welcome was given to Miss Amy Johnson, C.B.E., on her return to England on Monday, August 4. She returned by the Imperial Airways India service, and that morning started from Vienna at 7 a.m. The machine in which she arrived was the Argosy G-EBLF piloted by Mr. Youell. Besides Miss Johnson there were two other passengers in the machine, and also Miss Johnson's private secretary. The arrival at Croydon had been advertised for 6 p.m. and crowds assembled all along the route from the aerodrome to Grosvenor House Hotel in Park Lane in good time to see the return home of the heroine. It was a showery and unpleasant bank holiday, and the patient hero-worshippers must have had a very dreary and tiring wait. But nothing seems to daunt the persevering spirit of a London crowd intent on seeing a procession.

At Croydon aerodrome the police arrangements were excellent, and there was never any danger of a repetition of the riotous scenes which marked the arrival of Lindbergh. The main public enclosure was situated by the site of the old Plough Lane, and there was also the usual small public enclosure next to the aerodrome hotel. The roof and lawn of the hotel itself were well filled, but the great majority of spectators were out on the road.

Early in the afternoon it was known that the Argosy was meeting strong head winds on the continent. Miss Johnson herself said that at times they were blowing up to 50 m.p.h., and for most of the way they varied between 30 and 40. People who had arrived at the aerodrome by 5 p.m. or earlier felt their hearts sink as the notice went up on the board that "LF" was not expected in until 8.30 p.m. Youell had intended to land at Lympne to refuel, but he had to do it at Brussels. Then the probable time of arrival was put back to 9 p.m., and this proved a correct forecast. The crowds went on waiting in patience. At all costs they were determined to see Amy.

Nature finally staged a most effective setting for the arrival. At 8.45 the sun went down below the horizon in a red glow. A mass of black clouds piled up just to the south of the gorgeous sunset, while behind us a half moon began to brighten up the other half of the sky. Lighthearted Moths and a crazy-flying Avro gavorted across overhead to fill up the

last weary quarter of an hour. Then at two minutes past nine the escort of three small aeroplanes shot into view from behind the aerodrome control tower, speedily followed by the Argosy herself. Our photographs show what an impressive sight she made as she crossed the wonderful colour splashes of the sunset, circled the aerodrome twice, and then, with engines throttled down, glided in to land. The sound of distant cheering was faintly heard, but the noise of the Jaguar engines soon drowned it. We who were on the arrival platform were all feeling quite poetical and romantic about the whole occasion, when the official broadcaster kindly came to the rescue with the needful light relief. "She's stalling! She's stalling!" he informed the startled and air-minded British public. Aero club members from Land's End to John o'Groats must have had a dreadful moment, as they pictured the experienced Youell letting the Argosy spin into the ground, while mechanics, firemen, and ambulance men dash forward to extricate from the ruins the mangled remains of our Amy. What a story it would have made for the penny papers! But a serious-minded person with some elementary knowledge of aeronautics put the announcer right, and listeners-in were able to breathe again.

A searchlight cast its beam on the Argosy, and we could see the door of the saloon opened and Mrs. Johnson climb in to greet her brave daughter. Then Amy herself emerged and was led to the platform where Lord Thomson greeted her. If the time of her arrival was no great advertisement for the punctuality of air travel, at least her appearance was a great testimonial to the cleanliness of aircraft. Very seldom can a young lady, after 14 hours of journeyings, have emerged so absolutely spick and span as did Miss Johnson. One had come to think of her as permanently clad in khaki shorts and shirt, or at best in a Sidcot with Irving bustle. This very smartly attired young lady, with immaculately waved hair, came almost as a surprise. She looked as fresh as paint.

It is an irony of modern progress that an actual occasion is usually spoilt for those who see it in order that those who listen in and go to film theatres and read newspapers may get a more realistic impression than is permitted to the actual audience. On this occasion the vans of the "talkies" were drawn up like a line of tanks. The hum of their apparatus



TRIUMPHANT RETURN OF AMY JOHNSON: Miss Amy Johnson, C.B.E., the air heroine of the Empire, speaking through the microphones soon after her arrival at Croydon Aerodrome last night (August 4). She arrived some three hours late owing to a gale. Behind her stands Lord Thomson, the Air Minister. (*Daily Mirror*).

drowned the voices of the speakers, the flashlights went off like star shells over the trench lines; while the speakers on the platform directed their remarks exclusively to the microphones. To those standing round not one word was audible. However, it is gathered that Lord Thomson described Miss Johnson's flight as "one of the most memorable achievements of a year which has been called the 'Woman's Year'." The Secretary of State proceeded to speak of the spirit of adventure in which she set out alone along the long trail blazed by British airmen, which is still beset with mysteries and hazards for even the most experienced pilots. He described the interest with which the whole civilized world followed Miss Johnson's progress, her good luck and her bad luck, and how her dauntless courage compelled the respect of cynics and won genuine and widespread admiration. Lord Wakefield followed, with a commendably brief but very good little speech, in which he neatly said that whereas Miss Johnson had once written to him that aviation meant more

to her than anything else in the world, now she herself meant more than anyone else to aviation. Miss Bondfield, the Minister of Labour, who had flown over with Lord Thomson from Hanworth in a N.F.S. Desoutter, congratulated Miss Johnson in the name of the women of England, and handed her a large parcel of letters which had come for her.

Miss Johnson then read a carefully prepared speech, in which she thanked everybody who had helped her and who had greeted her. It also was inaudible at Croydon, and the wind seemed to get colder and colder as she read page after page. The most attractive passage ran as follows: "Love of flying and the desire to help on flying are my ideals. I am never so happy as when I am away alone in the silence of the wide open space of the skies, free to do exactly as I like and to go where I will. These are my tastes, and it has required all my courage to face crowds and public applause and to make speeches."

After the speechifying was over, Miss Johnson was driven



AN ECHO OF A GREAT FLIGHT: A snap of Miss Amy Johnson taken at Sourabaya while her D.H. "Moth" was having its tanks replenished with "Shell" motor spirit.



The arrival at Croydon. (FLIGHT Photo.)

round the aerodrome in a car, while the mobile floodlight showed her to the waiting crowd in the main public enclosure on the Plough Lane side of the aerodrome. Then she drove at little more than a foot pace through the streets from Croydon to Grosvenor House Hotel in Park Lane. It was drizzling on and off, and the car was an open tourer. But the patient waiting thousands along the 12 miles of route certainly deserved a glimpse of her whom they had come out to see. So Miss Johnson stood up in the car and bowed to the people practically all the way. She said afterwards that she tried to sit down whenever the crowd was thin, but always had to jump up again in a minute or so. The car arrived at the hotel at 11.35 p.m.

The gathering in the hotel was strangely mixed. Chiefly it was composed of ladies in evening dress, some of them blazing with jewels, but there were some men there in equally blazing plus fours. They too had waited a long time, and they could not understand why the progress from Croydon was so slow. Consequently, when Miss Johnson arrived and at once went off to change into an evening frock, the wait seemed worse than it really was. Actually, she was very quick indeed, and after only 25 minutes she appeared in the salon at midnight clad in a charmingly simple and very becoming dress of pale yellow, in which she looked extremely attractive. Her enthusiastic reception seemed almost too much for her, and after saying "Thank you all very much," she more or less collapsed on a sofa. When her parents appeared to support her, she recovered her composure, faced the cameras and flashlights once more, and was then conducted to a room on the first floor to give an interview to the press.

Once she began to talk about flying, Miss Johnson became a different being. She indulged in no more well-rounded Ciceronian sentences, but spoke naturally and convincingly. What is more, she showed herself an excellent spinner of a good yarn, as well as a girl who can use her brains and who has opinions of her own. She admitted that she had had a very bumpy journey that day, but she did not mind bumps, as she was used to them. Still, she hated being a passenger in an aeroplane—as most pilots do. For herself she preferred an open cockpit as she liked stunting, and she did not feel so happy in a cabin.

She was asked about her adventure in the sandstorm near Baghdad, and became quite animated as she recalled the incident and told the true version of the story. She said that exaggerated accounts of that and of other incidents had got into the press; in fact she hardly recognised any of

the stories about her which she had seen in the papers. She had not drawn her revolver, though she had it in her pocket. The true facts were these. She was flying across the desert and she picked up the Tigris river. She knew that she only had to follow that for a few minutes to reach Baghdad, in fact she could almost see Baghdad in the distance, though it was hazy. Suddenly without warning she found herself in a sandstorm, and at first she did not know what it was. But she lost sight of the Tigris very soon. She had been flying at about 7,000 ft. to keep cool, but the bumps began, and she was speedily dropped down in a series of violent bumps to 2,000. Had she not been strapped in, she would certainly have been thrown out of the machine. As it was she bumped her chin violently against the cockpit. The Moth was almost out of control. Then she caught sight of a railway and tried to follow it, but very soon lost it in the haze. She came lower still and found herself flying over lots of caravans, and saw the camels bolting as she flew over them, and the people running about in all directions. Then the sand got so thick that she lost sight of the ground altogether, and though she tried to head into wind she could not manage it. At last she felt her wheels hit the ground, so she thought she had better land. She throttled down and eased back the stick, undoing her belt as she did so. As the Moth landed across wind, she jumped out of the cockpit, seized the tail, and swung the machine round head to wind, just in time to save it from being blown over sideways. It was, however, blown backwards. So she got out all her baggage and chocked up the wheels and waited for the storm to abate. These sandstorms, she said, sometimes last for two or three days. She had been told that the dogs in the desert were very savage to strangers, and she heard dogs barking in the distance. So she was very glad when the storm began to go down, and hurried to get her luggage into the locker again. She had only just finished and prepared to take off, when the storm blew up again as violently as ever.

Still, what she considered her worst experience was crossing the Java sea, and it was also a bad time getting to Singora. A reporter in search of "the human element" asked her how she felt when she first saw Australia. Miss Johnson provided him with no "sob stuff." She just laughed and said "Oh, nothing much: just that I was very glad to see land again." Another reporter supposed that she would not like to do the flight again, to which she replied, "I wouldn't mind; but not in monsoon time." She was asked what she considered the most important quality in a touring pilot; was it handling of the aeroplane? She considered a second, and then said,

"No, I shouldn't think so much of the actual piloting. The chief thing is a thorough knowledge of maps and compasses, and also of the engine. No engine will go on running for ever without attention. Nuts and things will work loose and need to be tightened up." She thought that most engine trouble was due to carelessness or ignorance in caring for the engine.

As for her future plans, she had none for the present, except to fulfill her contract. She would do that, and the rest seemed too far away. But she should certainly keep on at flying. By this time we were getting well on into Tuesday, and doubtless Miss Johnson was very glad to have done with the press and to get to bed.



Part of the great crowd outside the aerodrome. (FLIGHT Photo.)



Derby Municipal Aerodrome

THE Council of the Derby Chamber of Commerce has passed a resolution: "That this Council generally is favourable to the project for the establishment of a municipal aerodrome, and to the whole matter being fully explored."

The Chicago Air Meet

WE understand that Flight-Lieut. R. L. R. Atcherley and Mr. R. L. Preston, of the Household Brigade Flying Club, are going to Chicago to represent Great Britain at the International Air Meet to be held there shortly. They are taking with them a single-seater Blackburn "Lincock" with "Lynx" engine.

The Arctic Air Mail in Canada

A NEW record for air travel in northern Canada was achieved on the first air mail flight this spring between McMurray on the Athabaska River, 250 miles north of the Edmonton, and Aklavik in the delta of the Mackenzie River, a distance of 1,630 miles. The Commercial Airways machine made the trip in 11 hr. 5 min. The old mail service between these points, it may be recalled, took 73 days by dog train in winter and 15 days by steamer in summer.

Air Service for Peace River District, Canada

A NEW airways company to be known as Peace River Airways, Ltd., is being organised to provide a commercial air service between Edmonton and Grande Prairie in the Peace River district of northern Alberta. An initial flight

has already been made to Edmonton in a new American Eagle biplane piloted by Mr. A. C. Craig. Mr. Craig intends to purchase a larger aeroplane and to open a flying school. An airport is already in existence at Grande Prairie in connection with various patrol services.

Increased Profits for Guinea Airways, Ltd.

ALTHOUGH established only a little over two years ago the half-yearly report and balance sheet of Guinea Airways, Ltd., shows that the company earned a net profit of £22,696 for the six months ended February 28. From the time of its inauguration until the end of February, 3,002 passengers and 1,375 tons of cargo have been carried. The chief pilot of the company (Mr. A. S. Cross) is at present abroad on leave, during which he will visit the Junker factory in connection with the construction and assembly of two large three-engined machines to be ordered by Bullolo Gold Dredging, Ltd., for the transport of their power and dredging plants next year. This undertaking, involving the carriage of about 2,500 tons of heavy machinery, will be carried out under the supervision of Guinea Airways. The gross revenue of the company for the six months amounts to £45,213, of which £18,459 was absorbed by wages, running expenses, etc. After the deduction of two dividends and the share bonus, £794 remains to be carried forward. The total assets of the company, including six aeroplanes, plant, stores, etc., amounts to £47,413. The fourth general meeting of shareholders will be held at Brookman Buildings, Grenfell Street, on May 30.

INTERNATIONAL TOURING COMPETITION

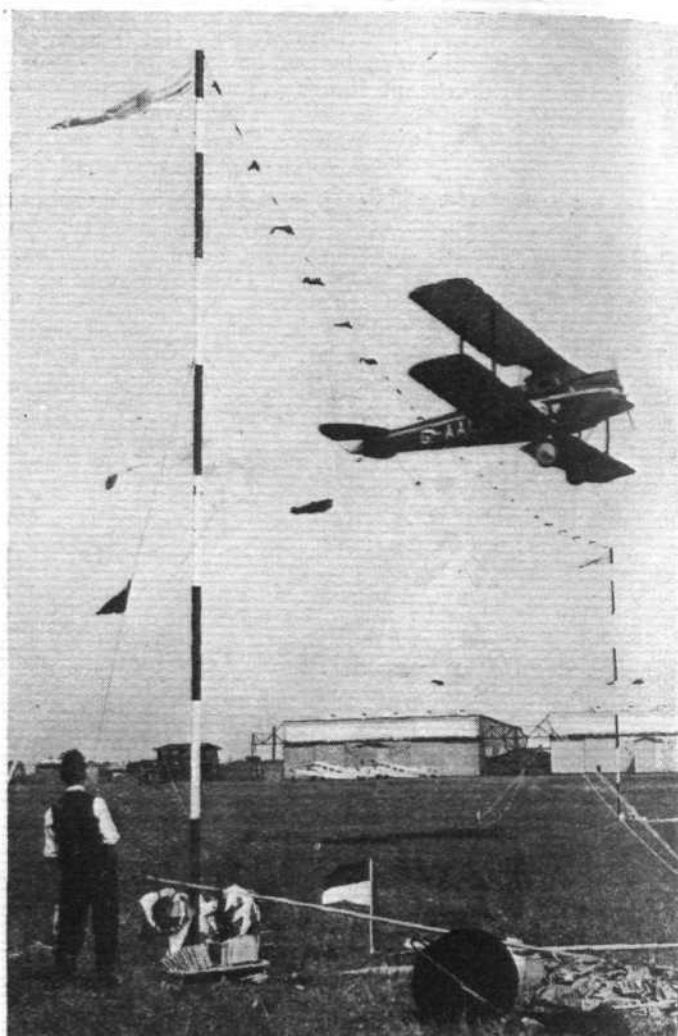
Beginning of Technical Tests

By EDWIN P. A. HEINZE

ON August 1, the weather having, after weeks of rain and storm, suddenly bethought itself of its summerly duties, the sun bathing the Staaken aerodrome of Berlin in a flood of light as if to make amends, the technical tests began of the light 'planes returned from the nerve-racking tour through Europe's riotous firmament. The first part of the tests took two days, as the late arrivals from the tour had to be considered. But there appears to be plenty of time to get through with the tests before, or rather till, the end of August 7, when they are booked to be finished.

These technical tests have the object of ascertaining which of the 'planes that have proved their touring qualities are also the most suitable for a private owner in respect of comfort, safety and economy. The rating in these tests takes place on a point system handled in such a manner that a certain number of maximum points may be gained for a number of predetermined features and performances.

During the air tour the average speed and reliability have been tested, the maximum number of point awards obtainable being 270, namely, 195 points for average speed and 75 points for reliability. In this part of the trial the British machines were eminently successful. Both Capt. Broad and A. S. Butler were able to obtain maximum awards, they being the only ones to procure this number of points. Unfortunately, Butler's protest against his disqualification for having fitted a propeller to his machine at one stop, that he had not carried with him all the time, was not admitted, so he is out of the contest in spite of his otherwise splendid performance. Propeller defects, by the way, were rather common during this moist air tour. The propeller of one competitor became so soaked with water that it positively disassembled itself and several others broke. Butler's disqualification has aroused considerable criticism in German aviation circles, as it is felt the regulation in this point is too strict. Especially the speed rating, which has severely handicapped the fast British machines in favour of slower competitors, has aroused much discussion, too. It appears difficult to arrive at a fair system of rating as long as 'planes of such widely varied engine power are all to be brought down to a common denominator. The present regulations give a distinct pre-

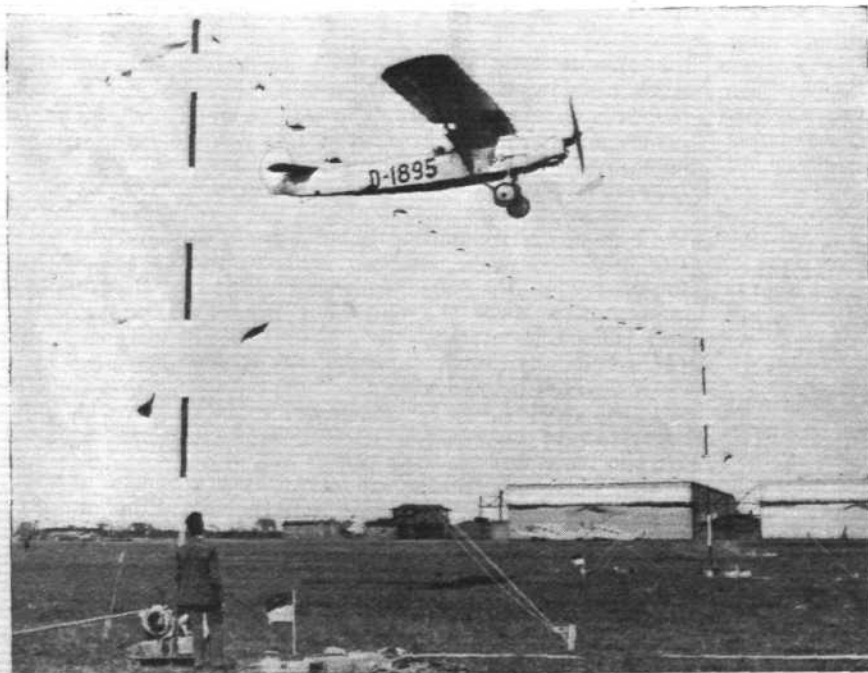


"OVER THE TAPE": Miss Spooner, in her Gipsy-Moth, clears the obstacle in the Technical Tests.

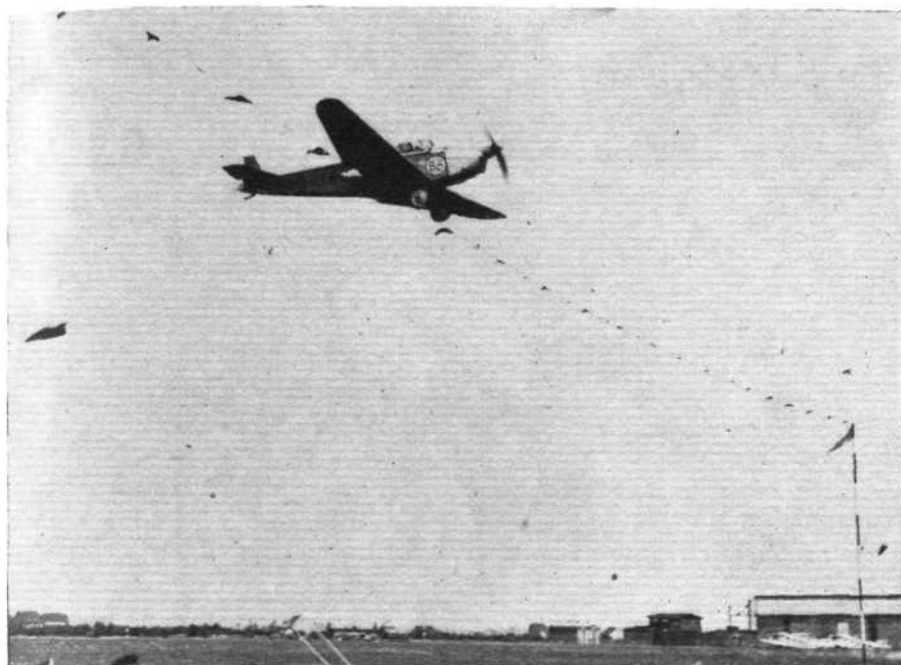
ference to the lightest and lowest-powered machines, and the important factor of speed, which in an aeroplane should be of prime importance, since saving of travelling time is the main inducement to the employment of an aeroplane, is artificially kept out of the reckoning. Perhaps some good can be done in a future event by adopting a different means of classification than the weight; for instance, piston displacement, provided it is possible to stop racing engines of short durability being employed.

However, this cannot be our concern now. On August 1 and 2, the machines were tested for the ease with which they can be dismantled and re-erected for flight. The 'planes were rolled out on the field, and in the presence of stewards two persons of the crew had to dismantle the wings, fold them back or hang them up on the sides of the fuselage. The time required was registered by two officials and entered on a time sheet. Then the crews, if desired with the assistance of others, had to push the machines through a gateway 3½ metres (11½ ft.) broad and high. The time required for this was, of course, not rated. But the time for dismantling and re-erecting together was limited to 20 minutes. After passing through the gateway, each machine had to be pulled a short distance by a motor-car placed at the disposal of competitors by the German Aero Club. Next, on a given sign, the same two persons that dismantled the machine had to refit it.

For these operations a maximum of 30 points could be awarded, which, however, no one really would be in a position to win as there appears to be a small flaw in the point system. The points are awarded as follows: Dismounting of wings 6 points,



An Albatros L.101 landing over the tape.



Poss, on a Klemm-Argus, clearing the obstacle.

folding back of wings 9 points, time required for carrying through the dismounting or folding back 9 points, and an all-metal 'plane, the skin of which also consists of metal, receives an additional 6 points, provided it is fitted with some sort of device enabling it to be moored on the ground, and which is carried with the machine during flight, being included in the weight. Now a machine either has dismountable wings or folding wings, and is hence only able to attain a maximum of either 24 or 21 points. But, of course, in the end effect this is immaterial. During these first two days only the ability to dismount and refit the wings and the fitting of a starter and ready starting of engines were rated.

The Moths of Lady Bailey, Miss Spooner, whose partner since touching London is Mrs. Butler, and Capt. Broad, as also H. J. Andrews' Arrow, were each able to obtain 18 points, as did also the Archduke of Hapsburg-Bourbon with his Moth for the dismounting or rather folding back of the wings and the time required for carrying through this operation. Of German machines the BFW's of Morzik, Baron von Freyberg, von Köppen, von Waldau and Krüger likewise obtained 18 points. The Klemms, the wings of which can only be dismounted so

that they have to be lifted by two men and hooked up on the fuselage, were at a disadvantage, whilst the machines with fixed wings, such as the American Mono Special of J. E. Carberry, the Avro Avian of S. A. Thorn and some of the Polish machines constructed by engineering students gained no points at all.

In the engine starter and starting tests the German 'planes were able to make up a considerable number of points as against the British competitors. So much so that Morzik (BFW-Argus), Poss (Klemm-Argus) and Notz (Klemm-Argus) were able to advance to 2nd, 3rd and 4th place as the total rating now stands, because their engines are all equipped with a starter, for the provision of which 6 points were awarded. The same number of points were also granted for ease, or rather rapidity, of starting an engine. As none of the British machines are provided with starters, they each lost 6 points as against the German machines. Lady Bailey's and Miss Spooner's engines were the only ones to behave well and start up immediately, so the ladies received the full number of points for this item. Capt. Broad and

Andrews each obtained 4 points, Carberry was awarded 5, and S. A. Thorn 2 points. None of the competitors so far have managed to obtain 12 points. Nearest to this figure



THE COFFEE MILL : Starting the Argus engine of a Klemm.



ENGINE-STARTING: Swinging the propeller of the Archduke Hapsburg-Bourbon's Gipsy-Moth.

came the German Osterkamp on a Salmson-powered Klemm, which started surprisingly easily and attained 11 points. Next came the Pole Wieckowski on an RWD 'plane, which also had a Salmson engine, and he obtained 10 points. Krüger, with an Argus-powered BFW, received 9 points, and 8 points were awarded to the other Argus-powered BFW's of Notz, von Waldau, von Massenbach, the Klemm-Argus of Lusser and the 'plane of the Pole, Plonczynski, which had a Salmson motor. The Argus engines would doubtless have come off better, if the starting crank could have been applied inside the fuselage as is the case with the Salmson motors instead of a member of the crew having to get out and crank up the engine from the left side.

The motors were required to work for three minutes, when they had to be cut out again. After a while then the machines had to make ready for



A BELIEVER IN CONTROL SURFACES: This Polish PWS 8 biplane, with Walter "Vega" engine, is very reminiscent of the Handley Page "Gugnunc." The lift bracing is in the form of a single strut in the plane of the rear spars. (FLIGHT Photo.)

flight to which they were sent off one by one. Before going into the air, however, they had to make right and left-hand turns on the ground to demonstrate their ease of manipulation.

We append a list giving the present position of the contest, and from this it will be seen the German machines, practically all of them of the second or lighter category, hold an exceedingly strong position. In these first technical tests, Morzik was able to gain 25 points, whereas Capt. Broad could only gain 22 points. Lady Bailey and Miss Spooner gained 24 points, but especially Lady Bailey is badly handicapped by her losses during the air tour, which accrued to her solely for her plucky enterprise in attempting to cross the Pyrenees, when all others refrained from doing so. She was forced to return to Pau, but having once started the time spent there was reckoned as flying time, so her average speed for the whole tour was very adversely affected.

On Sunday, August 3, the fuel-consumption test was held, all competing 'planes being called on to cover four times a circuit 48 miles long, starting from Staaken aerodrome at Berlin to a turning point distinctly marked by a bridge over the River Elbe westward of the airport. All the morning was taken up by metering out to the competitors fuel that was supplied by the organisers, each machine being supplied

with exactly the same fuel. The German machines, which are the only competitors left against the British since all others are far behind in the contest, have made good a considerable number of marks. The order of the competitors in regard to the total number of points they have to their credit has remained practically the same. Dinort went up immediately below Polte, Carberry has advanced on place and beaten von Köppen, Gothe has gone down two places behind von Waldau, Roeder has gone one up above Baron von Freyberg, and Spengler has been disqualified for not carrying his spare propeller with him during the fuel-consumption trial.

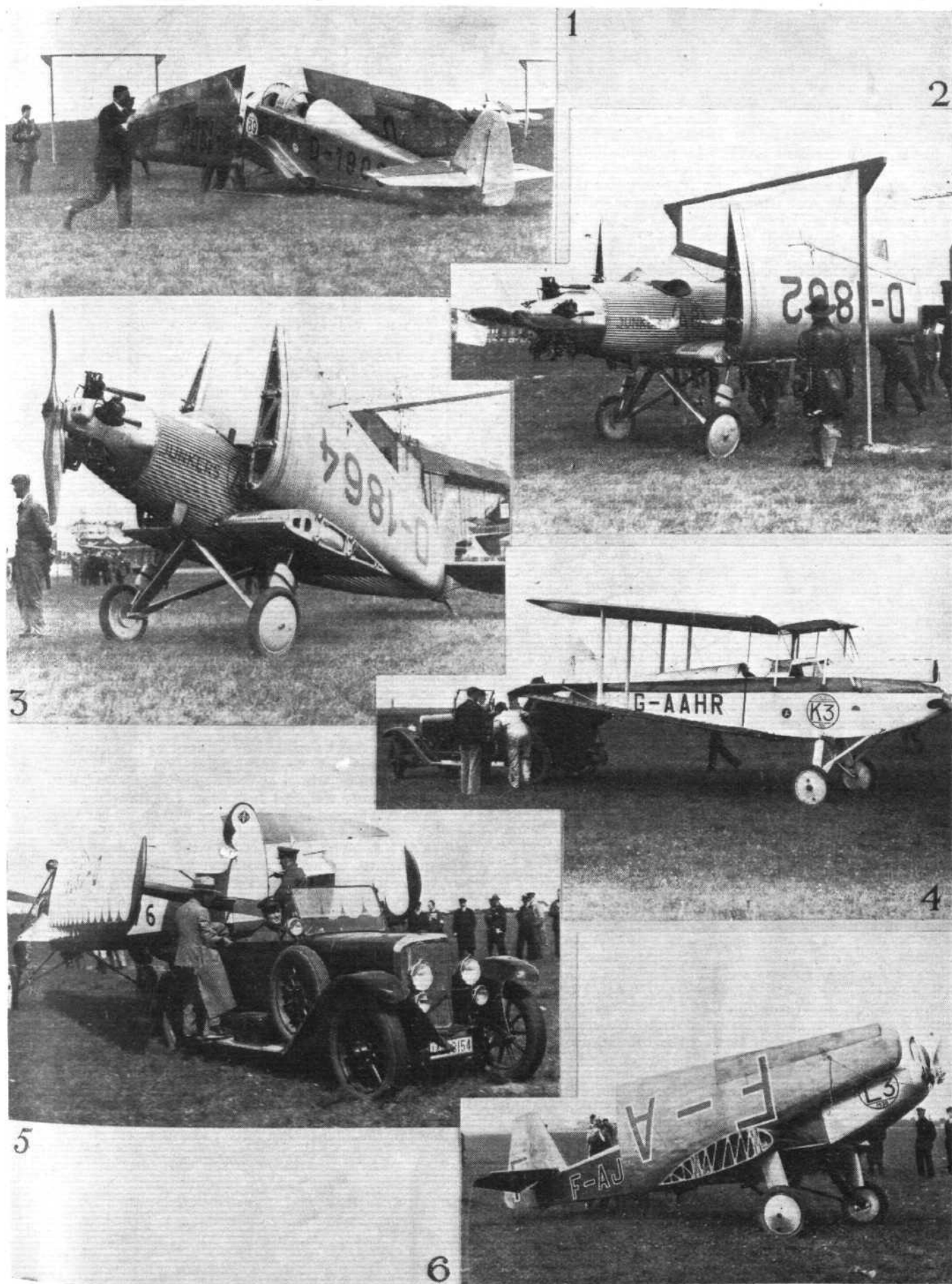
While Broad, who is still leading, has won 27 points, the next two pilots, Morzik and Poss, each won 30 points, Notz gained 28, Miss Spooner 30, von Massenbach 26, Polte 25, Dinort 30, Kruger 22, Carberry 30, von Köppen 27, and Thorn 30. This, too, is the order in which the leading competitors now stand. Broad now is only a single point ahead of last year's winner, Morzik. The rating was handled as follows:—Each machine of the first category was awarded 10 points in as far as the fuel consumption kept below 16 kg. for 100 km. Beyond this one point was awarded for every 250 grams of fuel saved. 250 grams are $\frac{1}{2}$ kg. and slightly more than $\frac{1}{2}$ lb. Thus, when a machine consumed, say,

Position of Competitors in Circuit of Europe

Competition No.	Machine and Engine	Pilot	Average Speed, km./h.	Points Speed	Points Regularity	Competition No.	Machine and Engine	Pilot	Average Speed, km./h.	Points Speed	Points Regularity
A2	Klemm-Argus	Lusser	139	143	75	K3	Moth-Gipsy	Broad	175	195	75
A8	Junkers-Genet	Roeder	131	123	75	K4	Spartan-Gipsy	Andrews	97	21	30
A9	Junkers-Genet	Risztics	143	151	75	K5	Moth-Gipsy	*Butler	179	195	75
B3	B.F.W.-Argus	Morzik	148	188	75	K6	Moth-Gipsy	Lady Bailey	109	57	75
B7	Klemm-Salmson	Osterkamp	123	151	75	K7	Monocoupe-Warner	Carberry	173	193	75
B8	Klemm-Argus	Poss	149	189	75	K8	Moth-Gipsy	Miss Spooner	165	185	75
B9	Klemm-Argus	Dinort	145	185	65	L3	Caudron 193-Renault	Arrachart	131	123	75
C1	Klemm-Argus	Notz	146	186	75	M1	Caudron 193-Renault	Finat	137	139	75
C3	B.F.W.-Argus	v. Freyberg	101	93	60	O1	P.Z. L5-Gipsy	Gedgowl	99	27	60
C5	B.F.W.-Siemens	v. Köppen	138	178	75	P2	RWD 4-Hermes	Bajan	110	60	60
C6	B.F.W.-Siemens	v. Waldau	105	105	60	P3	RWD 2-Salmson	Plonczynski	128	161	75
C7	B.F.W.-Argus	v. Massenbach	151	191	65	P4	RWD 2-Salmson	Wiekowski	127	159	75
C9	Arado-Argus	Peschke	134	132	75	T5	Moth-Gipsy	Habsb.Bourbon	113	69	75
D1	Arado-Argus	Pasewaldt	125	105	75						
D5	Klemm-Genet	Spengler	118	84	75						
E1	Klemm-Genet	Benz	119	87	75						
E2	Junkers-Siemens	Gothe	128	114	65						
E6	Klemm-Siemens	Siebel	122	96	75						
E8	B.F.W.-Argus	Kruger	139	179	75						
F2	B.F.W.-Siemens	Polte	147	187	75						
K1	Avian-Hermes	Thorn	155	175	75						

* Disqualified.

Competitors D7, D8, O5, O6, S1, and S2 are not out, but are among those who had not returned to Berlin by the evening of July 31, and to whom a bad-weather extension of time had been granted



VARIOUS STYLES OF WING FOLDING : These photographs from the International Touring Competition indicate how aircraft designers of various nationalities provide for reducing space required for garaging machines. 1, a Klemm has its wings dismantled and stacked on the side. 2, a Junkers "Junior" with a front spar universal joint. 3, another Junkers uses stacking of the wings. 4, shows the simple British way of folding, the machine being Broad's "Moth." 5, is one of the Arado monoplanes, which uses a system intermediate between folding and stacking. 6, illustrates the Caudron way, tying the wings on with rope.

14 kg. instead of 16 it stood to receive an extra of eight points per 100 km. on top of the 10 points, or 18 points altogether. This is the extent, in fact, to which Capt. Broad was able to save his fuel.

The rating for the smaller machines was 10 points for a fuel consumption not exceeding 11 kg. per 100 km. and one additional point for every 175 grams consumed less than 11 kg. The maximum number of points that could be obtained was limited to 30. Wonders were accomplished in the matter of fuel saving. Plonczynski, the Polish pilot, on his Salmson-powered RWD 'plane, affected the greatest saving. He only used 15.8 kg. of fuel. His machine belongs to the second category. He won 30 points on this stunt—you cannot really call this feat by any other name—i.e., the same number as Morzik, who used 22.36 kg. The Polish machines appear to possess particularly good air-sailing qualities, for Plonczynski's partner, Wieckowski, on an exactly similar machine, achieved an almost identical saving in fuel consumption, for he only used 16.14 kg. It is stated these machines only averaged 38½ miles an hour on the consumption trial, but I was not able to verify this yet. The only German flier to attain a similarly low consumption was the well-known sail-flier Dinort, who on his Argus-powered Klemm used 19.34 kg. for the total distance, which measures not quite 192 miles. All the engines of these competitors were, of course, thoroughly tuned down to this low consumption, and for this reason I do not consider this consumption test is really of very much practical value. No private owner flying a machine and finding himself short of fuel will be able to make alterations to his carburettor during flight and attain a fuel saving anywhere near these figures. What, therefore, is the use of these tests? Most of the machines, that otherwise take off very readily from the ground, taxied almost the whole length of the field to get into the air at all, so small were the jets put into the carburettors.

Monday, August 4, it was intended to carry through the take-off and landing tests over an obstruction 8 m. (26 ft.) high; but the weather was again rather inclement, and the international sports committee decided to employ the day in rating the building features and equipment of the machines. The results of this rating will not become known before the afternoon of Tuesday, but they are likely to affect the number of points gained by the various competitors, of whom now only 32 are left, to a very considerable extent. In view of the many comfort features of German 'planes, it is quite conceivable they will gain an ascendancy over the British machines.

If one considers the technical tendencies evident in the competing machines this year, one is struck with the now almost general adoption of wheel brakes and of more powerful engines. It was only a few years back aeroplanes with 35-h.p. and even 20-h.p. motors were met in such events. That now is entirely a matter of history and even in Germany, where quite a number of Klemm 'planes with 20-h.p. Daimler-Benz motors used to fly, the owners have mostly preferred to install stronger engines. A certain Italian make of engine, that two years back was quite a favourite, has disappeared almost entirely. The only engines met in this contest are "Gipsies," "Cirrus," "Genet" of British make, "Argus" (in large numbers), Siemens and Halske SH13a, and two new BMW's of German make, Salmson and Renault of French make, an American Warner on Carberry's American "Mono Special" and two or three Czecho-Slovakian Walter engines. And the lowest powered of them all is the Salmson, which normally is rated at 40-h.p., but is known to be capable of about an extra 10-h.p.

The weights of the machines form quite an interesting study. Most of the competitors, of course, made the best possible use of the margin of 15 per cent. allowed them over the permissible weights of 400 kg. for machines of the first category, and 280 kg. for those of the second. Whatever

Position of Competitors on August 2

Competition No.	Country	Pilot	Class	Points
K3	GB	Capt. H. S. Broad ..	I	292
B3	Gn	Morzik ..	II	288
B8	"	Poss ..	II	287
C1	"	Notz ..	II	286
K8	GB	Miss Spooner ..	I	284
C7	Gn	von Massenbach ..	II	281
F2	"	Polte ..	II	281
E8	"	E. Krüger ..	II	281
B9	"	O. Dinort ..	II	274
C5	"	von Köppen ..	II	273
K7	GB	J. E. Carberry ..	I	273
K1	"	S. A. Thorn ..	I	252
B7	Gn	Osterkamp ..	II	250
P3	P	Plonczynski ..	II	244
P4	"	Wieckowski ..	II	244
A2	Gn	Lusser ..	I	239
A9	"	J. Risztics ..	I	239
M1	F	Finat ..	I	229
C9	Gn	Peschke ..	I	225
L3	F	Arrachart ..	I	212
D1	Gn	Dr. Pasewaldt ..	I	201
E2	"	Gothé ..	I	192
E6	"	Siebel ..	I	192
C6	"	von Waldau ..	II	191
D5	"	W. Spengler ..	I	181
E1	"	H. Benz ..	I	181
C3	"	von Freyberg ..	II	174
A8	"	Roeder ..	I	166
T5	Sp	Archduke Habsburg-Bourbon	I	162
K6	GB	Lady Bailey ..	I	156
P2	P	J. Bajan ..	I	125
O1	"	J. Gedgowd ..	I	106
K4	GB	H. J. Andrews ..	I	73

GB = Great Britain.

Gn = Germany.

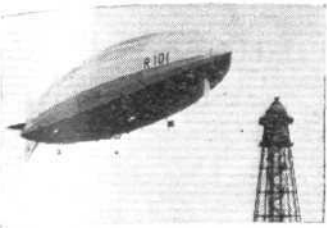
P = Poland. F = France.

Sp = Spain.

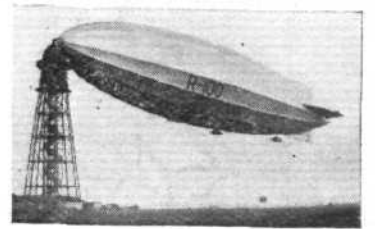
Machines in Class I are allowed a tare weight of 400 kg. plus 15 per cent. Those in Class II a tare weight of 280 kg. plus 15 per cent.

weight there was to spare was utilized to install extra equipment and comfort to gain points on that score. Capt. Broad's machine, which at the utmost was allowed to weigh 460 kg., actually weighed 454.5 kg., i.e., he was only 5.5 kg. on the safe side. Morzik almost had 10 kg. to the good. His machine might have weighed 322 kg., but it actually only scaled 312.3. The third man on the list, Poss, allowed his Klemm-Argus to weigh as much as 320.8 kg. But closer still to the limit came Fauvel's, the French pilot's, Mauboussin, which approached the limit to within 100 g., weighing 321.9 kg. His machine, however, is out of the contest. As yet it is, unfortunately, not possible to get full particulars of the reasons that led to so many competitors dropping out. As we already reported, quite a number of failures are to be attributed to propeller defects. Most failures, however, are probably due to engine, carburettor and magneto defects, which is not surprising considering the exceedingly wet weather the competitors had to face in the air tour. The organisers intend making a full technical report later on after the competition is over, when they will be able to gather all the particulars from the various stops of the air tour. That will be more important than the whole contest, as it will give manufacturers the necessary clues for further improvements that have to be effected.

(To be continued.)



AIRSHIPS



R 100 FLIES TO MONTREAL

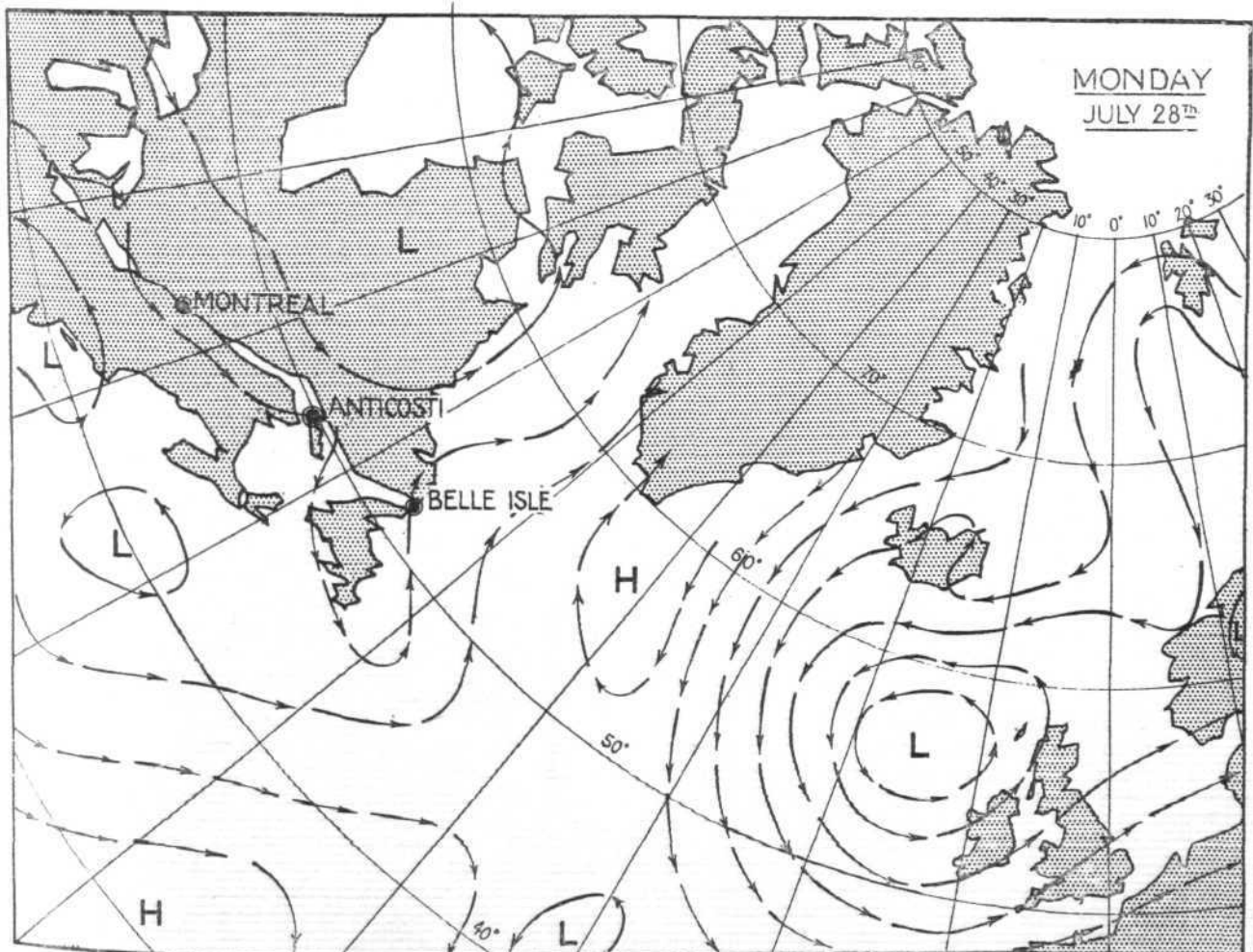
WHEN our last issue went to press R 100 had started on her way from Cardington to St. Hubert, and had met with a disappointment through the unexpected movement of a depression off our western coasts. Since then she has arrived safely at the airship station of St. Hubert, outside Montreal, after a journey which was full of interest and not devoid of adventure. It will be convenient to start at the beginning and tell the whole story. In the main, it is a story of splendid navigation, of getting reliable information about the weather and acting on that information in such a way as to escape from unfavourable positions with the minimum loss of time and fuel, while manoeuvring so as to get the best out of every favourable circumstance. We must remember that the east to west crossing of the Atlantic has only been made four times before by airships (namely, by R 34, by the *Los Angeles*, and twice by the *Graf Zeppelin*), so that there was a minimum of experience behind the captain and navigator. R 100 is a more powerful airship than any of her three predecessors, but she is of novel and experimental design. The captain was, therefore, faced with a number of problems for which there was no precedent. In order to help readers to understand the intricacies of the ever-changing weather situations, we are reproducing four weather charts, which will show the problem presented by the shifting "highs" and "lows" each day. The information about their movements was gathered by wireless information from Cardington and Canada, as well as from Greenland and from

surface ships on the Atlantic. Had the wireless failed to provide this news, and had Mr. Giblett not been able to plot out the new positions, it is possible that the supplies on board the airship would not have sufficed to carry her safely to her destination. The debt to the wireless and meteorological organizations cannot be overestimated. In fact, it is an acknowledged principle that without very good meteorology and wireless, airship navigation is not a practical proposition.

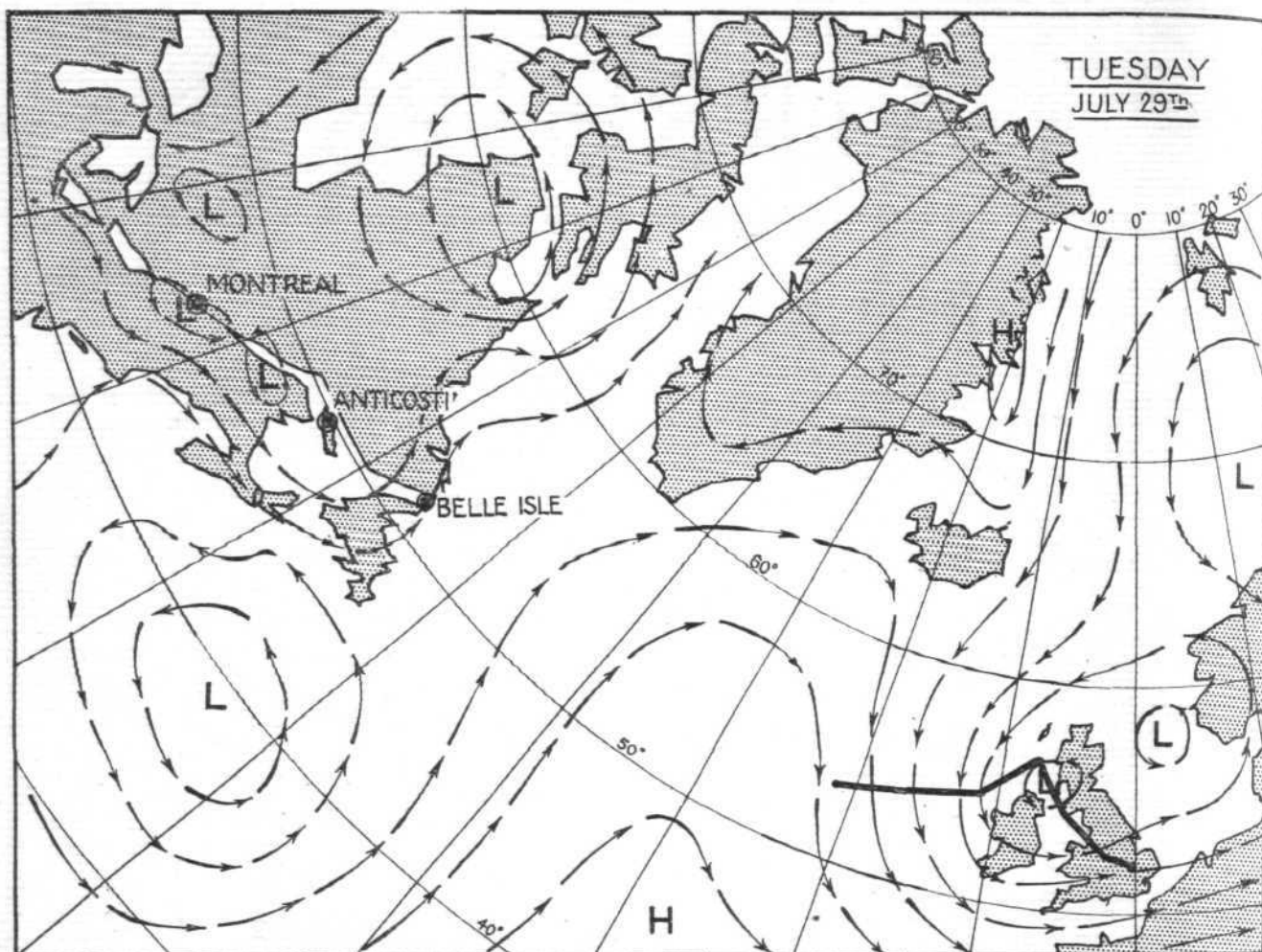
The airship slipped from the tower at Cardington at 2.48 a.m. (G.M.T.). All times in this article are given in G.M.T. unless otherwise stated. She had on board 34.8 tons of fuel and 54 tons of ballast. There were 44 souls on board, six of them being official passengers. The airship also carried 1,918 lb. of food (sufficient for five days) and 500 gallons of water for drinking and washing. Each officer and passenger was allowed 30 lb. of baggage and each member of the crew 15 lb.

When the mooring cable was cast off, the heavily-laden airship appeared to sink below the level of the tower head. Her engines and elevators had to be used to make her climb. She went steadily up to 1,200 ft. and shaped course for Liverpool.

The first chart, dated Monday, July 28, makes clear the reasons why this course was chosen. It shows a depression lying off western coasts of the British Isles. This depression had been stationary there since the Saturday before, and there seemed no reason why it should not stay there for the



This chart shows the position of the weather in the Atlantic before the start of R 100. It was calculated that by steering between Scotland and Ireland the airship would find an easterly wind to the north of the "low."



After the airship had started the "low" moved across the British Isles and so R 100 got into northerly winds. The "high" in mid-Atlantic advanced, and caused westerly but light winds in its northern half.

rest of the summer. The winds round a depression blow anti-clockwise, so if R 100 could get to the north of that system, she would find an easterly wind which would blow her nearly half way across the Atlantic. Good weather in the British Isles is notoriously fickle and apt to fail us when we most need it, but we usually feel that we can count upon bad weather, though it is seldom in much request. But this "low" seemed to be inspired by an evil spirit. Having ruined the Test Match by staying where it was, it saw no reason for continuing longer in that same position. The thought that it might help a British airship by "staying put" would naturally be abhorrent to such a "low"; so it moved eastwards. The second chart shows the altered situation which Squadron Leader Booth had to face after he had begun to steer for the north coast of Ireland. Instead of an east wind he found a northerly one. The track of the course shows how he made the best possible use of this, turning somewhat to the south, so as to get what help was possible from the northerly wind.

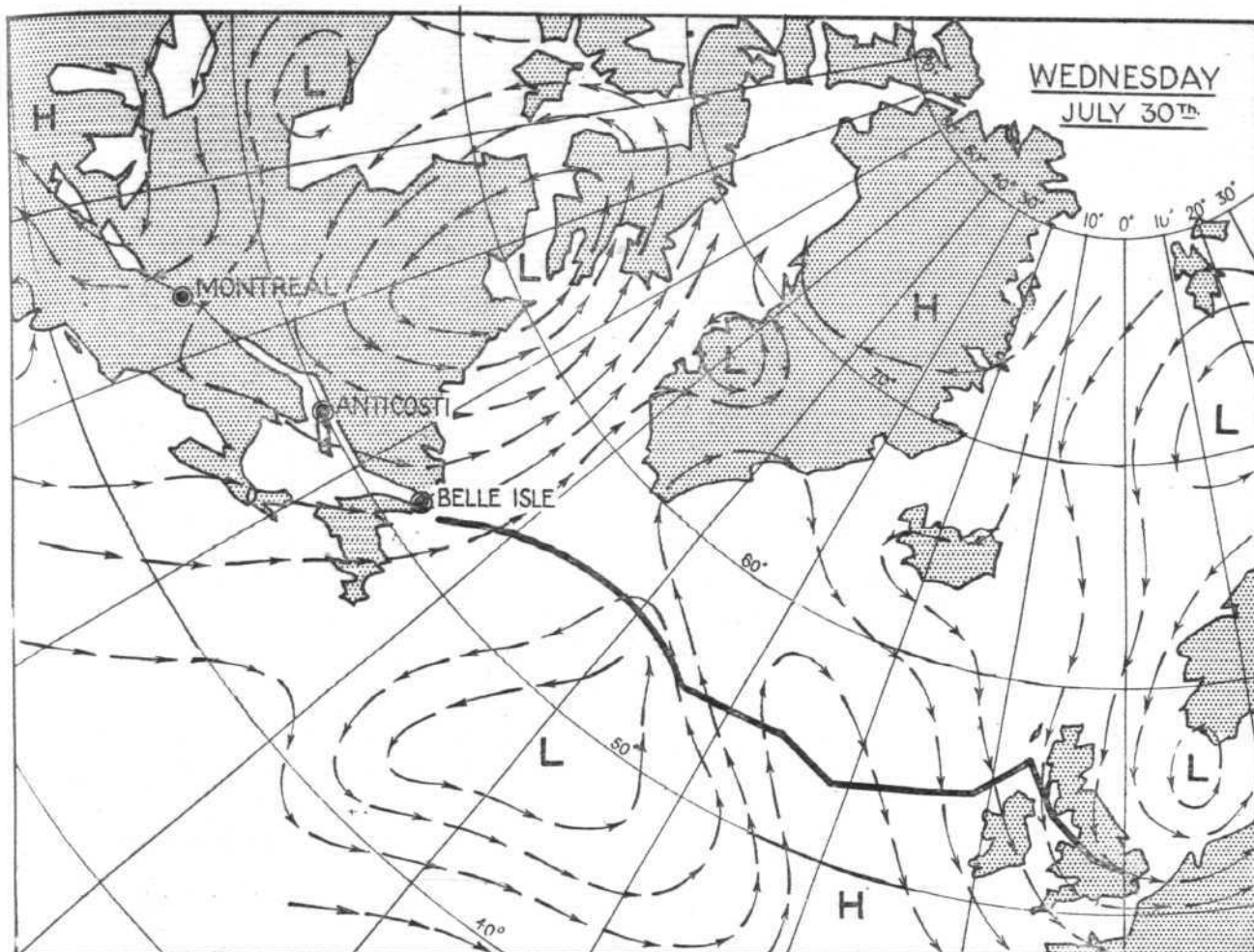
The course so far had been as follows: At 3.45 the airship was nearly over Rugby, and at 6 a.m. she had reached Chester. At 8 she passed over the Isle of Man, at 9 over the Mull of Galloway, and half an hour later she passed the Maidens, which are rocks off the coast of Antrim a little to the north of Larne. She passed between the coasts of Scotland and Ireland, and at noon left behind the island of Rathlin, the last she saw of European land. The winds had kept her ground speed, or "speed made good," low. Until she got clear of the depression it varied from 46 to 48 m.p.h. The wind, partially on the starboard beam, was about 30 m.p.h. Apparently, though the reports are not detailed, the two engines in the aft car were not in use at this time.

In the rear of the fickle "low" lay a huge anticyclone, or "high," with its centre on the Azores. As the "low" moved eastwards until its centre was off our eastern coasts, this "high" advanced, as will be seen in the second chart, dated Tuesday, July 29. The northern circumference of this "high" lay just off the coast of Greenland. The winds round the centre of an anticyclone blow clockwise, but are not violent, and are accompanied by fine weather. Such winds would give no definite help in the way of blowing R 100 on

towards Canada, but they would give a minimum of resistance, and the accompanying circumstances would be pleasant. So Booth worked his way through the tail of the "low" and gradually came into the influence of the large anticyclone. Soon his speed made good went up to 60 m.p.h., and anxiety about the adequacy of the petrol supply began to diminish. By midnight on the first day the airship had covered about 1,000 miles of her journey and had used just over 2,200 gallons of petrol. On the second day R 100 met with her one piece of really good luck, though, of course, good luck would have been useless if the brains on board had not had the knowledge and skill to profit by it. The charts show that in the two previous days a "low" had been forming over the Bermudas. This now began to move eastward with some vigour. It, so to speak, hit the western circumference of the great "high" and dented it in. On Wednesday winds were blowing up from the south-east where the two weather systems lay side by side. By 6 a.m. on the Wednesday morning Booth had manoeuvred R 100 into this air current, and then turned her nose north-westward, so as to get the full help of the wind. By noon the ground speed had gone up to 85 m.p.h. The strength of the wind was then 30 m.p.h., and R 100 was flying well within herself. All along the airship had been receiving weather reports from surface craft, which seemed to be making a special effort to send reliable and prompt news to their mate up aloft. So Mr. Giblett was probably in a better position to forecast than were the meteorologists at the Air Ministry.

The report from R 100 issued at 6 a.m. on Wednesday did not reach the Air Ministry until the evening of that day. The airship had got out of wireless touch with England. The message was picked up by the station at Louisburg in Canada, and was transmitted by beam wireless to Cardington. It had not been expected that the change from connections with England to connections with Canada would take place so soon. Thereafter all messages were transmitted from Louisburg to Cardington. The change had been expected when the airship passed longitude 35, which is roughly about half way across the Atlantic.

The airship had been flying throughout at a height which varied from 2,100 to 1,200 ft. As the wind got behind her, so she reduced her altitude. She was reported to be behaving



A "low" from the Bermudas has moved eastwards and made a dent in the western side of the "high." Winds in that area are blowing from the S.E. R 100 got into them and her speed increased to 85 m.p.h.

splendidly, and every message said that everything on board was "O.K." With such comparatively slight variations of altitude, the expenditure of ballast was probably kept down to what was barely necessary to balance the expenditure of fuel. But, as the airship passed through a good deal of rain, she had a valuable means of replacing the expended ballast. Before the airship started, Squadron-Leader Booth had a brain-wave. The panels of fabric between the girders are concave in R 100, though not in R 101. The water which collected on the top panel weighed the ship down, and a pipe was carried up to drain it off. Booth conceived the idea of draining it into his ballast tanks, and in a very short time he collected a ton and a half of water.

In a message despatched on Wednesday morning, the airship reported that she expected to "make landfall," or sight land, at 8 a.m. G.M.T. the next day. The favouring wind enabled her to do much better than that. She actually reached the Straits of Belle Isle at 9.30 p.m. (Eastern Standard time) that same night. That equals 2.30 a.m. on Thursday morning by Greenwich mean time. At that hour she had only used about two-thirds of her fuel supply, so that she was now in a very happy position as regards that vital matter. She followed the northern bank of the Gulf of St. Lawrence. The distance from Belle Isle to Montreal is some 900 miles. She had a wind of 22 m.p.h. against her, and she climbed up to 2,200 ft. She had met high cloud in the Belle Isle Strait, but up the Gulf of St. Lawrence the weather became clearer and at times the wind dropped to 10 m.p.h. By noon on Thursday, she was off West Point, Anticosti Island. At large towns like Murray Bay, Quebec, and Three Rivers, she was watched by huge crowds.

When the airship was only 200 miles off Montreal a rent was reported in the fabric of the port fin. Speed was immediately reduced to 12½ knots, and riggers went up to repair the damage. C. Flatters worked on the outside of the fin. Temporary repairs were made after two hours' work, and the airship proceeded slowly on her way. There was now no hope of landing that evening. Seven hours later the airship passed through a thunderstorm. This was at 9.30 p.m. local time, which equals 2.30 a.m. on Friday morning by Greenwich mean time. The airship was shot up violently from

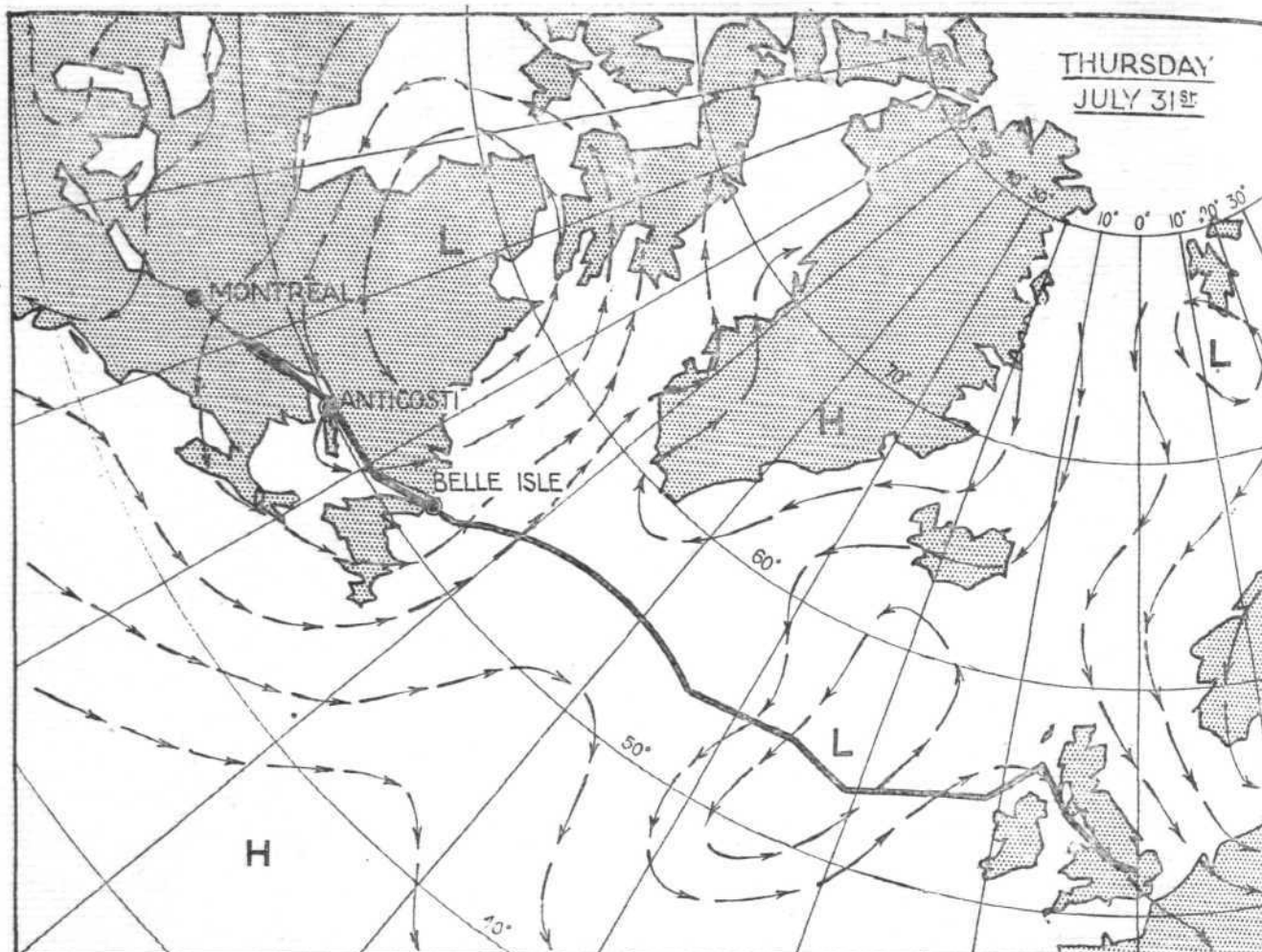
1,500 to 4,000 ft., and then dropped again. Reports have been received of her assuming extreme angles of pitch, but they are not official. The only damage reported was a slight rent in the fabric of the starboard fin. This was not repaired in the air and R 100 flew on to Montreal, avoiding many other thunderstorms. The airship arrived over Montreal during the very early hours of the morning, but cruised round until it was light. The mooring cable was dropped at 4 a.m. (local time, which equals 10 a.m. G.M.T.) and was made fast half an hour later. The total time in the air was about 79 hours and the expenditure of fuel was just under 30 tons. She moored with 5 tons still in her tanks.

OFFICIAL PRESS LOG BY WING-COMMANDER R. B. B. COLMORE, O.B.E., DIRECTOR OF AIRSHIP DEVELOPMENT.

THE Air Ministry places the following official account of the flight of R 100 from Cardington to Montreal, which has been written by Wing-Commander R. B. B. Colmore, O.B.E., Director of Airship Development, at the disposal of the Press: R 100 took off from the Cardington mooring tower at 0348 B.S.T. on Tuesday, July 29, and shaped course for Liverpool, flying at about 1,200 ft. We had on board 10,440 galls. of fuel and 5.4 tons of ballast. Total persons on board, 44. Wind was about 30 m.p.h. south-westerly. Speed made good 46 m.p.h. Everybody turned in except those on duty. Chester was passed at 0600, and the ship's course was then set for the Isle of Man, passing over Liverpool en route. Mull of Galloway 0900. Sea smooth. We hoped to pick an easterly drift in 2 or 3 hours. Passed the Gloucester-Belfast boat at 0930 G.M.T. Squadron-Leader Booth started exposing the Petri dishes, donning rubber gloves for the purpose of these exposures. Will be continued throughout the flight.

At 1000 to 1015 hours a wonderful view was obtained of the northern Irish coast. Cut short by a bank of intensely white low clouds. Our decision to proceed north of Ireland was taken to get north of a depression passing eastwards just north of Ireland. This we have done, and at 1030 are just passing the centre of the depression. The alternative of shaping a course to pass south of Ireland would not have been possible owing to very strong headwinds. We probably have saved many hours by this decision, illustrating the importance of good weather charts. All on board are now settling down to ship routine. Cards and sleep are the most popular methods of passing the time throughout the day. The weather has been very good. The sea appears moderately smooth, and the winds, although by no means favourable, are of light nature. Everybody has been able to keep warm comfortably without recourse to flying kit, and it has not been necessary to switch on the electric radiators in the passenger accommodation.

At about 1700 hours a whale was sighted on the port beam. Giblett (Meteorological Officer) reports that steamships are evidently making a special effort to give a good reporting service. We have located a further depression from these reports moving north-eastwards from the vicinity of Bermuda.



When R 100 reached the Canadian shore she came into the southern half of a "low" with its centre over Labrador. Winds were therefore against her from Belle Isle to Montreal.

We hope to make use of this depression to-morrow. When we meet it we shall manoeuvre to pass just north of this depression. No complaints from anybody about anything. Food has been really excellent.

Second day, July 30

At midnight July 29-30 (11 p.m. ship time), the clocks having been put back one hour, our position was 53° 5' N. 21° W. or approximately 1,000 miles of our journey having been completed in the first 20 hours for just over 2,200 galls. of petrol, which is a good start.

At about 0530 G.M.T. the liner *Ausonia* was passed. She left Southampton on Friday last. Further ship reports have been received, and we are going to edge north to get on the north side of the depression located and mentioned yesterday. Our ground speed is increasing, and by noon it has reached 85 m.p.h. After breakfast the two forward engines which had run without interruption from the start were stopped and examined, the forward and aft engines in the after car being started up to replace them.

Some sparking plugs and a rocker bush were changed, otherwise the engines were in perfect condition. During most of the day the ship was flying in low cloud or fog, and this was turned to advantage by the collection of the water condensed on the outer cover through funnel-shaped trunks connected by a down pipe to the ship's water system. In this way it has been possible this morning to collect over 2 tons of water. In spite of low cloud and fog we have never been more than a few miles out in our dead reckoning position. It is 5 p.m. ship's time, 8 p.m. G.M.T. The clocks having been put back 3 hours (from 8 p.m. to 5). We decided to increase air speed to 60 knots as there is just a possibility of making Montreal to-morrow morning.

Later. Head winds increasing, no chance of landing Montreal to-morrow morning. Belle Isle sighted at 9 p.m. ship's time. Head winds for remainder of journey now almost certain, and we will continue at 60 knots, reserve of fuel being now ample. The sweepstake on the ship's day run was won by Eldridge with 1,095 nautical miles.

At midnight (8 p.m. ship's time) our position was 52° 15' N. 54° W., roughly 3,286 miles travelled, 1,700 gallons of petrol remaining. Earlier reports are confirmed, and we must expect head winds for the remainder of the journey.

Third day, July 31. Passing West Point, Anticosti, at 8 a.m. ship's time. Passed over liner *Duchess of Bedford* and many surface craft. We have noticed that the wind is less inshore, and have decided to hug the left-hand coast line for the remainder of the way up to Quebec. We are not 2 miles from shore, and our ground speed has increased by 6 m.p.h. Flying at 800 feet.

Passed Father Point at 11.54 a.m. local time. At 12.20 p.m. local time the damaged fabric port fin was reported by special signal. Two hours later temporary repairs completed. Over Quebec at 5.50 p.m. local time. Proceeding Montreal at 45 knots air speed at 9.30 p.m. local time. Passed through thunderstorm, violently disturbed air currents. Ship's height varied rapidly between 1,500 and 4,000 ft.

Slight damage to starboard fin, otherwise ship O.K. Avoided many thunderstorms. Dropped main wire at 4 a.m. local time August 1. A good landing made. Time in air about 79 hours, of which 8 have been due to damaged fin. Crew have made a really good job of the repair. Petrol on board at end of flight, 5 tons.

R 101 Being Lengthened

R 101 has been separated into two parts in her shed at Cardington. The pin joints which join the frames were loosened to the rear of the living quarters, and the two halves were floated apart to the extreme ends of the shed. The new transverse frame will be assembled in the shed and raised into position, complete with gasbag, etc., between the two ends. This will increase the gas capacity of the airship by 500,000 cub. ft., and will add some ten tons to her gross lift.

Air Items from Italy

RAPID communication between Italy and Central Europe has again been established by the reopening of the Trento-Innsbruck-Munich-Venice-Milan air route. New schedules on the Rome-Milan air route enable a return journey being made with ample time to transact business, etc. In order to popularise air travel, reductions in fares have been made on certain Italian air routes. For instance, the fare between Rome and Venice, on the "Transadriatica"

route has been reduced from 375 to 300 lire, corresponding to the normal first-class railway fare. On long-distance services, fares include full hotel expenses—passengers arriving at Athens en route for Rodi are entitled to meals and night accommodation at the hotel.

A new aero engine was exhibited at the recent Rome Light 'Plane exhibition; this was a two-stroke engine, developing 65-69 h.p., by "C. A. Maggi-Berardi." A new "Caut 38" fleet-spotter or reconnaissance seaplane recently completed its flying tests with satisfactory results.

It is stated that out of 682,000 lire taken at the recent big air display in Rome (the Italian equivalent to our R.A.F. Display), 469,592 lire have been forwarded to the Institute of Aviators' Orphans.—C. R.

Italy-Australia Flight Abandoned

SIG. SAVINO, the Italian pilot, who recently attempted a flight from Rome to Australia in a "Moth" seaplane, has decided to abandon the flight, but will attempt to fly back to Rome from Karachi in five days.

CORRESPONDENCE

[The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.]

MADRAS—OOTACAMUND SERVICE

[2324] Although I have not seen the report regarding the proposed air service by amphibian "Moths" between Madras and Ootacamund, to which you refer in your editorial of June 6, previous rumours about a proposal to start an air service have been published. The position is that Ootacamund is the most hopeful place (until night flying is instituted) to which commercial aviation may look for development in the Madras Presidency, as those who frequent the summer capital are generally those who can afford to pay to fly there. The Madras Flying Club, which will start flying by the end of this month, is consequently interested in the question of finding a landing ground there and with this in view, I paid a short visit to Ootacamund with Flight-Lieut. Rimmer, the pilot of Messrs. Burmah-Shell Oil Storage and Distributing Co., of India Ltd.'s "Moth," to reconnoitre the downs.

I think we can safely rule out the lake from our calculations; but although no ready-made landing ground could be found, the construction of a landing ground on the downs or the improvement of the race course (with the race club's permission) for use as a landing ground would, in my opinion, be feasible if the Madras Government or the Ootacamund Municipality decide that they wish to have the benefits of air transport.

Meanwhile, the necessary ground work is being done, to ascertain the best landing places near the various large towns in South India, and in this respect Messrs. Burmah-Shell Oil Storage and Distributing Co. of India, Ltd., is taking a leading part in the development of aviation.

Messrs. Newall and Vincent have flown extensively in the Presidency, and must have collected much data concerning landing grounds.

Madras. A. S. GALLIMORE,
July 3, 1930. *Honorary Secretary, Madras Flying Club, Ltd.*

THE MEOPHAM DISASTER

[2325] With reference to the recent deplorable air disaster at Meopham, as so many experts have failed to arrive at the cause, I think the following theory offers a simple solution to the problem.

It has been stated that a wing was wrenched off; that the whole empennage became detached; that the engine and radiator fell off a mile away before the body of the machine reached the earth; that the ignition switch was found in the "off" position; that a blade of the propeller was missing. With these facts to work on, the cause of the accident seems very obvious. The propeller is said to have been a metal one. Evidently one blade became detached, causing terrific vibration.

Although the pilot switched off, it was too late to prevent the engine being torn from its anchorage, too late to prevent a wing being dislodged, too late to stop the tail from being shaken off. Anyone who has seen a blade of a propeller break whilst revolving at high speed will realise the enormous, tearing strain which is set up throughout the whole structure of the machine, and realise that it is quite sufficient to have been the cause of this so-called "mysterious" accident.

The reason that fire did not occur is very obvious, as it is said that the petrol tanks remained intact, and although no doubt there were petrol fumes and some leakage, there was nothing to cause ignition, the hot engine with magnetos having become detached earlier and falling elsewhere.

As so much doubt appears to exist as to the cause of the disaster, perhaps you would publish my theory, which may prove of help to those who have to deal with the matter.

W. R. BURNETT,
Late R.N.A.S., R.A.F.

Finchley.
July 13, 1930.

[2326] I have just read in your paper this week *re* the Meopham crash. You say that Col. Henderson was the pilot strapped in the aeroplane and was still alive when the first people got up to the crash. I want to point out to you that the proper facts are that my son C. D. O. Shearing was the reserve pilot who was still in the cockpit strapped in and was carried into the bungalow of Mr. Gray; he lived for about 15 minutes, but I was told by Dr. Golding-Bird, who was with him when he breathed his last, that he had both legs broken and a compound fracture of base of skull and was unconscious, therefore had no pain. I shall be grateful if you will rectify this in your next issue.

S. D. SHEARING

Crowborough, Sussex.
July 24, 1930.

INTERNATIONAL TOURING COMPETITION RULES

[2327] May I be permitted to point out what appears to be a misconception on the part of the writer of the descriptive article on the "Circuit of Europe" in your issue of August 1.

In the fourth and fifth paragraphs of the first column on page 860, your contributor criticises the use of the unit "metres" for the take-off figure and the unit "metre-seconds" is tentatively suggested.

May I point out that the unit "metres" is quite correct, since the expression for the take-off figure is the *sum* of two terms, the first of which is a length, namely, the actual take-off distance, measured in metres and the second (which is in the nature of a correction for wind) is also a *length*, being the product of a *time* and a *velocity*, and since the time is measured in *seconds* and the velocity in *metres per second*, the product will be correctly expressed in *metres*.

It may further be pointed out that unless the wind correction term were of the dimensions of "length" it would be incommensurable with the first term (the take-off run). Assessment formulae for use in competitions, consisting of the sum of incommensurable terms, are nearly always objectionable, since they rest on no rational basis and are difficult to interpret.

In this case, however, the framers of the rules have chosen a formula which is quite rational, since the wind correction term, *i.e.*, take-off time multiplied by wind speed, represents the distance by which the take-off run is theoretically shortened, if the wheel friction is neglected, and this formula is probably as fair a method of assessment as can be achieved in the circumstances.

Your contributor's second criticism appears to have more substance, though surely the word "and" in the first line of the second column of page 860 should read "or."

The article does not make it quite clear, however, whether the take-off distance is measured from the "start" to the "obstacle" or from the "start" to the point at which the machine leaves the ground (a distance which is certainly hard to measure correctly).

H. M. YEATMAN, A.F.R.Ae.S., A.M.I.Ae.E.
London, August 5, 1930.

[We are very glad to have Mr. Yeatman's comments on our criticisms in last week's issue of the wording of the rules and regulations governing the International Touring Competition. Our correspondent's defence of the use of the word "metres" is rather convincing, and we are inclined to agree with him that, under the circumstances, the application of the expression is justified.

As Mr. Yeatman points out, the word "and" in the first line of the right-hand column on page 860 should have been "or," since it does not matter whether the time or the wind velocity is nil, the product in either case being nil.

As regards the take-off distance, this is the horizontal distance from the point of contact of the wheels on the ground to the base of the "obstacle," and the time is taken from the moment the wheels begin to turn.—ED.]



ITALY— JAPAN

Francis Lombardi Flies 7,208 Miles in a Light 'Plane

WE have already recorded a flight recently accomplished by the well-known Italian pilot Francis Lombardi from Italy to Japan. Through the courtesy of Lt.-Col. P. F. Bitorri, Air Attaché to the Italian Embassy in London, we are able this week to give some further details of this flight, which was really a very fine achievement.

It will, perhaps, be remembered that Sig. Lombardi flew last February from Rome to Mogadiscio (Italian Somaliland) in seven days, a splendid effort in itself, but in his recent flight, from Vercelli in Northern Italy (his home town) to Tokio, he accomplished a noteworthy feat.

Sig. Lombardi left Vercelli on July 13 at 4 a.m. (European time) and reached Tokio on July 22 at 7 p.m. (local time, corresponding to 11 a.m. European time), thus taking nine days, seven hours for the 7,208 miles—about one of the best times achieved in a light 'plane.

The machine used by Lombardi was a Fiat "A.S.I." parasol monoplane, fitted with a Fiat "A.50" 95 h.p. engine.



Francis Lombardi (left) and his mechanic, Capannini, and the Fiat A.S.I. monoplane (95 h.p. Fiat A.50) in which they flew from Vercelli to Tokio.

This machine, by the way, was described in FLIGHT for May 16 and July 18, 1929.

His mechanic, Capannini, accompanied Ferrarin on the first Rome-Tokio flight in 1920.

The following is a log of Lombardi's flight to Japan; his average daily "hop" came out to about 750 miles, the longest being nearly 1,125 miles.

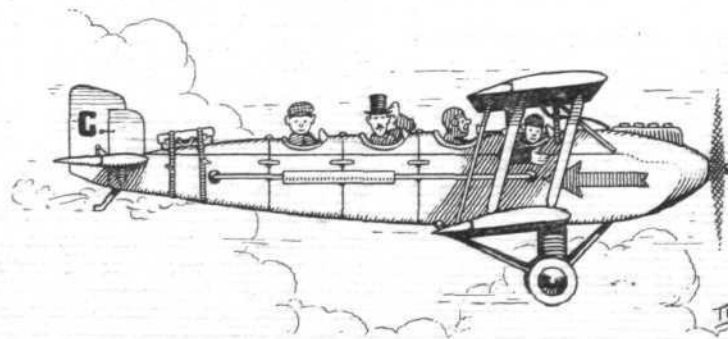


ITALY-JAPAN FLIGHT: Sketch map showing the route taken by the Italian pilot Lombardi on his flight from Vercelli to Tokio.

		miles.
July 13	Vercelli-Vienna ..	491.0
" 14	Vienna-Warszawa ..	360.4
" 15	Warszawa-Smolensk ..	497.0
" 15	Smolensk-Moskva ..	248.5
" 16	Moskva-Kazan ..	472.2
" 16	Kazan-Sverdlovsk ..	447.4
" 17	Sverdlovsk-Omsk ..	522.0
" 17	Omsk-Novo Sibiersk ..	391.5
" 18	Novo Sibiersk-Krasnoyarsk ..	404.0
" 18	Krasnoyarsk-Nizhne Udinsk ..	261.0
" 18	Nizhne Udinsk-Irkutsk ..	285.8
" 18	Irkutsk-Verkney Udinsk ..	174.0
" 19	Verkney Udinsk-Chita ..	279.6
" 19	Chita-Harbin ..	745.6
" 20	Harbin-Mukden ..	528.0
" 21	Mukden-Kejio ..	230.0
" 22	Kejio-Hiroshima ..	435.0
" 22	Hiroshima-Tokio ..	435.0

Total distance .. 7,208

THE STIMMUNS 'SMARTUN'



LIGHT, VARIABLE-PURPOSE PLANE ... TAIL UNIT CAN BE REMOVED TO ALLOW FOR COCKPIT-SECTIONS FOR EXTRA PASSENGERS ... EXTENSIONS TO WING-TIPS, TELESCOPIC PROP-BLADES, NEW PLUGS AND BETTER GAS, PROVIDE THE NECESSARY EXTRA POWER....

(With apologies.)

PRIVATE FLYING AND CLUB NEWS

LIVERPOOL AND DISTRICT AERO CLUB.—The Air Pageant which was to have been held on September 20, in conjunction with the opening of Speke, Liverpool's civic aerodrome, has fallen through owing to lack of support from the Liverpool Corporation. It is, therefore, decided to hold a small display in connection with the Liverpool-Manchester Inter-City Air Race, which is to take place on Saturday, August 30.

As Liverpool are the present holders of the cup, the race will this year start and finish at the Liverpool Club, Hooton Aerodrome, the course being *via* Manchester to Barton (Control), then to Southport and return to Hooton. Entrants are limited to *bona-fide* private owners or clubs of the Liverpool and Manchester districts.

The proposed display will be in the nature of an aerial gymkhana, and will include landing and balloon-bursting competitions, all-ages race, aerobatic displays, etc. Visiting pilots will be welcomed, and will be assured of a very pleasant afternoon. Competition rules are being carefully framed in order that risks and, therefore, insurance will be reduced to the absolute minimum.

Private owners wishing to attend should communicate with the Secretary, Capt. Ellis, Hooton Park Aerodrome, Hooton, Cheshire, who will be pleased to forward fullest details.

LLANDUDNO AIR PAGEANT.—On September 15 to 20 there will be a "Flying Week" at Llandudno, North Wales. Llandudno is one of the most attractive seaside resorts and an aerodrome is being prepared by the Council within 1 mile of the town.

Two races are arranged for private owners on Saturday, September 20, with substantial cash prizes, and it is hoped that private owners and club pilots will visit Llandudno for the week-end.

Will any pilot thinking of joining the party communicate with Northern Air Lines, Air Port of Manchester, Barton, Lancashire, who will be glad to book accommodation for visitors, and make all arrangements for a pleasant week-end.

NORFOLK AND NORWICH AERO CLUB.—The following were the results of competitions for visiting pilots held on Sunday, July 27, the day following the Air Pageant:—

Message Bag Dropping: 1st, F./O. W. E. P. Johnson; 2nd, Flt.-Lt. J. Bradbury; 3rd, Flt.-Lt. T. Rose.

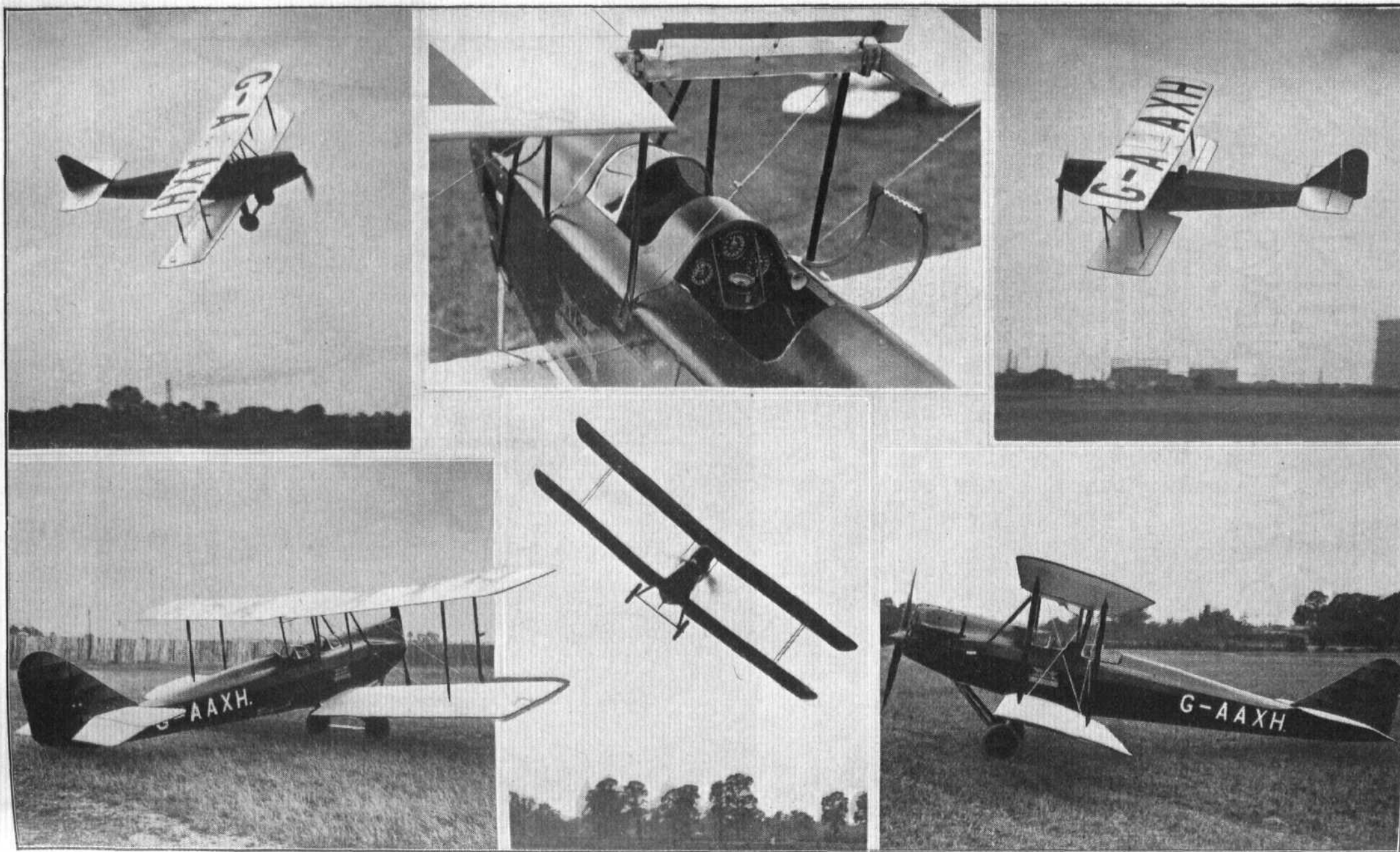
Balloon Bursting: 1st, Mr. Dick; 2nd, F./O. D. Salisbury Green; 3rd, Flt.-Lt. A. H. C. A. Rawson.

Aerobatic Competition for the Mobiloil Cup: 1st, F./O. W. E. P. Johnson; 2nd, F./O. D. Salisbury Green.

Take-off, Landing and Folding Competition: 1st, Flt.-Lt. T. Rose; 2nd, F./O. W. E. P. Johnson.



THE GATEWAY OF THE WEST: An aerial view of Yeovil aerodrome which also shows the extent to which the Westland Aircraft Works has now increased. The aerodrome is visited by many private owners on their way west. (FLIGHT Photo.)



A SPORTS MODEL: The new Avian ("Hermes") provides for the private owner who wants something with a rather better performance than the ordinary light aeroplane offers. In the centre the well-shaped fairing and folding windscreens, can be seen, while the folding flap in the centre-section allows easy access to the rear cockpit. (FLIGHT Photos.)



THE " PHOENIX " (SALMSON) : An original little aircraft produced by Boulton and Paul at Norwich.
(FLIGHT Photo.)

THE AUTOMOBILE ASSOCIATION has built up a highly useful aviation department under Mr. Ivor McClure, who is well known to all private owners. This department is now ready to give advice and propose routes for journeys by air to any part of the world. A system has been evolved whereby members may hire a series of maps for any particular journey and a large library is kept for this purpose. The message-dropping facilities which were instituted recently are also finding favour, and the A.A. scouts at the roadside telephone boxes are becoming quite used to dealing with these messages dropped to them. Readers who have followed our reports of flying meetings will be well aware of the valuable assistance which the A.A. staff always render on these occa-

sions by arranging for the parking and handling aircraft on the ground and picketing them out at night when no hangar accommodation is available.

THE NEWCASTLE AIR FETE will be held on Saturday, August 30. An attractive programme has been arranged which will include an arrival competition, a race to be flown on a closed circuit for a distance of about 24 miles, aerobatic demonstrations, parachute drops and other interesting features. Anyone who requires entry forms for the races or further particulars should apply to the Hon. Secretary, Newcastle Aero Club, Cramlington Aerodrome, Northumberland.

CROYDON WEEKLY NOTES

It is difficult to preserve one's sense of balance in these days when the cheap newspapers are shouting the odds in their raucous voices on all sides. The important thing, however, at Croydon is that the big transport companies continue to carry their two or three hundred passengers every day, safely and comfortably. And they continue also to make experiments tending to increase their usefulness and convert more of the general public to "air-mindedness." It is good that they are slowly advancing in spite of the attempts to get sensational "copy" by those papers which claim hypocritically to have fostered the cause of aviation since its earliest days.

We all join most heartily in congratulating Miss Amy Johnson on her brilliant flight. It was a difficult job carried through modestly and efficiently. And it is on that account that we deprecate the vulgar antics of the publicity mongers who are trying to climb on to the pedestal she built single-handed for herself.

We are told that she is a simple English girl who has done what many hundreds could have done if they had had equal opportunity. That is a very debatable statement. It might be worth putting to the test. Had the *Daily Mail* given its spare £10,000 to the ten leading flying clubs of the country, allowing them thereby to open their doors to many who are at present outside, they would have done something worth while. Miss Johnson is not receiving that amount for her great flight but in return for a publicity tour. And it seems poor pay for listening to the platitudes of pompous provincial mayors and Y.W.C.A. chair-women. The great crowds at Croydon on Monday doubtless saw in Miss Johnson, as in some "movie," an expression of their own unachieved romance and ambitions. That newspaper which presented £10,000 to the clubs would give hundreds of that crowd their chance to learn to fly. There may be other Amy Johnsons amongst them. And the virtue of the gift would reap a rich financial reward.

Monday evening was certainly the most romantic and enthusiastic occasion which Croydon has known. Not only did thousands see "Johnnie's" arrival, but millions must have listened to the B.B.C.'s excellent broadcast of it. The effect was heightened by the delay, due to head winds, which increased the suspense and excitement during three hours. At last the machine, G-EBLF, the Indian Air Mail which brought her from Salonika, was sighted, and after circling the aerodrome twice, Mr. Youell made one of his usual perfect

landings. It was quite dusk and the brilliant lights created a marvellous effect. This possibly gave the general public, parked on the Plough Lane side, a better view of the reception than they would have had in broad daylight.

Friday saw the end of another excellent flight at Croydon, when Capt. C. D. Barnard arrived at 6.15 p.m. after flying non-stop from Malta. Both outward and inwards journeys, each made without a stop, and within the space of two days, were very competent pieces of work. His "Puss Moth" looked remarkably clean, a testimonial to his engine, which retains the oil for its own use.

We are glad to see that Walcot Air Lines are continuing to operate, Mr. Rose, late of Imperial Airways, having joined them as pilot. Their Junkers, G-AAGU, made a very successful flight out to Milan and back this week.

Bookings to Le Touquet have been exceptionally heavy, and on Friday Imperial Airways had to put a special machine into the service. This has not happened before during the present year.

The B.B.C. surprise item on Friday evening included a broadcast from a Handley Page W 10 flying over Birmingham. A new type of microphone was installed, and although the reception was rather faint, the noises of the engines were successfully cut out.

The flow of gold via Imperial Airways to Paris continues unabated. It would be more reassuring were it in the opposite direction, but it is making valuable money for the firm which carries it and demonstrates the trust in which they are held.

Friday was quite a day of minor events. A client of Imperial Airways was taking a party to Goodwood, after which he motored them to Tangmere Aerodrome. A machine was awaiting them there and flew to St. Inglevert, where they de-planed for Deauville.

The Anglo-American Oil Co., who were the first to establish an aircraft filling station, the one at Croydon, are to be congratulated for the way in which they keep ahead of the times. I understand from Mr. Hewlett that they are now removing as many as possible of their advertising signs which admittedly disfigure the countryside. Those of us who fly over or motor through our English scenery will be glad that once more, so far as Pratts are able, we shall be able to see and enjoy its beauty. The traffic figures for the past week show that 1,333 passengers and 83 tons of freight passed through the air port.

M. L.

GLIDING

GLIDING CLUBS

THIS week we give a list of the Gliding Clubs as far as they are at present known. Gliding Clubs have been springing up very fast lately, and it is almost impossible to know which are definitely formed, and which

are only in the process of formation. We have, therefore, divided the list into those clubs which are, as far as we know, actually in being and those whom we have heard are trying to form clubs in their districts.

CLUBS IN EXISTENCE

Aircraft Club, Harrogate.—Secretary, The White House, Starbeck, Harrogate.

Bolton Light Aeroplane and Gliding Club.—Secretary, 7, Bute Street, Bolton.

Bradford Gliding Club.—Secretary, 17, Roslyn Place, Bradford.

British Gliding Association.—Secretary, 44a, Dover Street, London, W.1.

Channel Gliding Club.—Secretary, R.A.F. Station, Hawkinge, Kent.

Cononley and District Aero Club.—Secretary, 178, Skipton Road, Keighley, Yorks.

Derby and District Aero Club Gliding Section.—"Beachwood," Snelstone, near Cubley, Derbyshire.

Dorset Gliding Club.—Secretary, 4, Derby Street, Weymouth. Central Information Office, 5, Royal Arcade, Weymouth.

Essex Gliding Club.—Secretary, 20, Badlis Road, Walthamstow.

Halton Gliding Club.—Secretary, Halton Camp, Bucks.

Herts and Essex Gliding Club.—Secretary, 110, Dunmow Road, Bishop's Stortford.

Imperial College Gliding Club.—Secretary, Imperial College of Science and Technology, South Kensington, S.W.7.

Isle of Wight Gliding Club.—Secretary, 61, Swanmore Road, Ryde.

Kent Gliding Club.—Secretary, 14, King Street, Maidstone.

Kilmarnock Gliding Club.—Secretary, 7, Low Glencairn Street, Kilmarnock, Ayrshire.

Lancashire Aero Club Gliding Section.—Secretary, Avro Aerodrome, Woodford, Cheshire.

Leicestershire Glider Club.—Secretary, Turkey Cafe, Granby Street, Leicester.

London Gliding Club.—Secretary, 44a, Dover Street, London, W.1.

Malton Gliding Club.—Secretary, Welburn, York.

Merthyr and District Gliding Club.—Secretary, "Ingle-side," The Walk, Merthyr Tydfil, Glam.

Midland Glider Club.—Secretary, 17, Victoria Street, Wolverhampton.

Newcastle Mechanical Club Gliding Section.—Secretary, 27, Philiphaugh, Wallsend-on-Tyne.

North Cotswold Gliding Club.—Secretary, Evesham, Glos.

North Kent Gliding Club.—Secretary, Warren House, Bexley Heath, Kent.

Nottingham Glider Club.—Secretary, Welbeck Hotel, Nottingham.

Oxford and County Gliding Club.—Secretary, Circus Street, Cowley, Oxford.

Portsmouth Gliding Club.—Secretary, 9, King's Terrace, Southsea.

Sailplane Club of T.M.A.C.—Secretary, 404a, King's Road, Chelsea, S.W.

Scarborough Gliding Club.—Secretary, Harcourt Chambers, St. Nicholas Cliff, Scarborough.

South Essex Aero Club Gliding Section.—Secretary, 19, The Pavement, Chadwell Heath.

Stirling Gliding Club.—Secretary, Blairlogie Park, Blairlogie, Stirling.

Surrey Gliding Club.—Secretary, 24, Woodbridge Hill Gardens, Guildford.

Winchester Gliding Club.—Secretary, Fordington Road, Winchester.

CLUBS IN FORMATION

Bedfordshire.—H. A. Blundell, White Lodge, Cumberland Avenue, Luton, Beds.

Birmingham.—P. H. Meanley, 105, Hunters Road, Birmingham.

Birmingham.—C. Williams, 41, The Avenue, Rubery, Birmingham.

Bridlington.—A. Wilkinson, Jeweller, Esplanade, Bridlington.

Brighton.—F. G. Leaney, Hanover Crescent, Brighton.

Glasgow.—A. C. Mitchell, Beachmore, Kilmarnock Road, Whiteways, Glasgow.

Ilkley.—F. T. Greenwood, 6, East Parade, Ilkley, Yorks.

Ludlow.—A. Handy, Bull Ring, Ludlow, Shropshire.

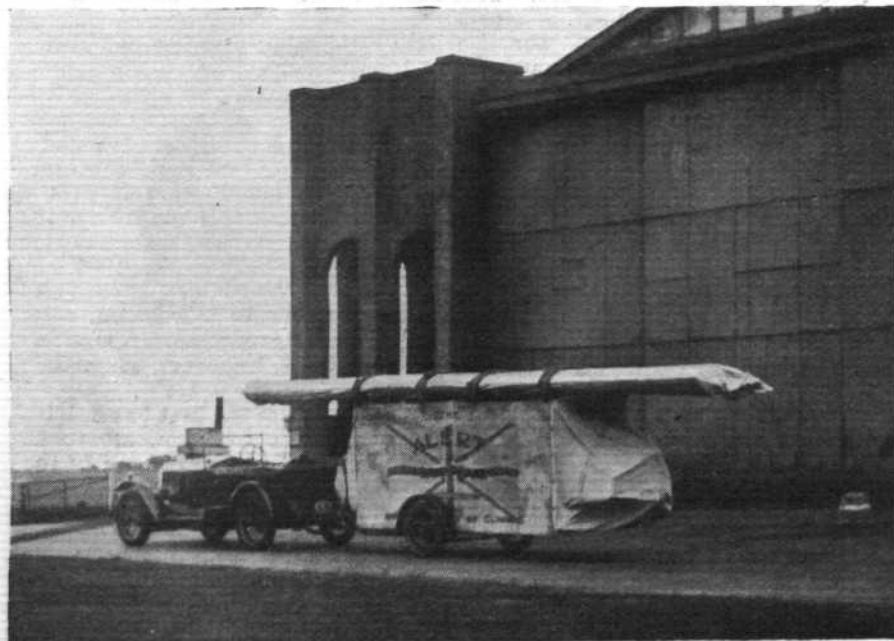
Matlock.—W. Walker, The Garage, Matlock Green, Matlock.

Middlesex.—D. Ussher, 36, Framfield Road, Highbury, N.5.

Pilning, Glos.—H. Sykes, New Passage Hotel, Pilning, Glos.

Stockport.—J. T. L. Mallard, Radio House, Sandy Lane Stockport.

Worthing.—S. F. Lillywhite, 42, Sompting Road, Broadwater, Worthing.

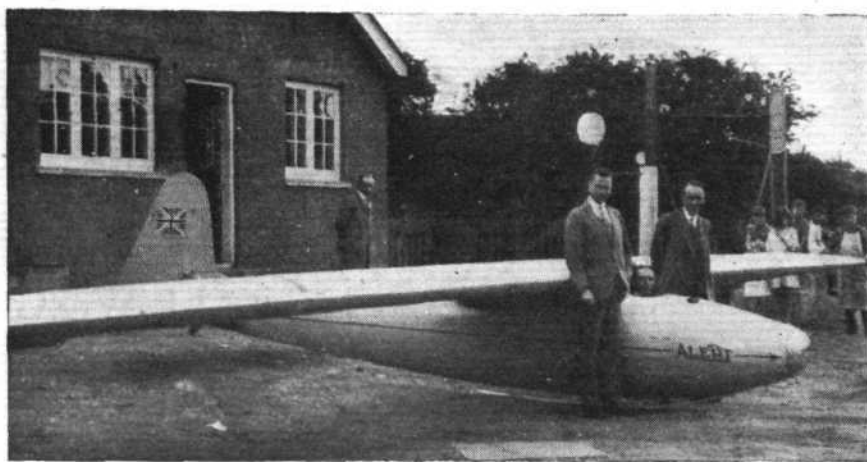


THE ALERT: This high efficiency glider has been built in this country with a view to showing them in Germany that we can hold our own in this form of sport. It has been designed by Mr. T. C. Letcher for Messrs. L. H. Ellis and Russell-Taylor and built by E. D. Abbott, Ltd., of Farnham. It was recently tried out with great success and although time only permitted short flights from level ground to be undertaken, the glider showed every sign of being a really good soaring machine.

It is now being taken over to Germany for the Rhön Competitions, where it is hoped that Mr. G. Haller, a highly experienced American soaring pilot, who has distinguished himself at the Wasserkuppe already, will do great things with it.

The design appears at first sight to be reminiscent of the Wien but on closer

inspection it becomes apparent that it is a full cantilever two-spar wing built up in three sections. The two wing tips carrying the wide chord ailerons being attached to the central portion by substantial spar fittings. The fuselage is a beautiful bit of work and the tail units are exceedingly neat. Our photographs show the Alert in its travelling crate and also assembled.



LANCASHIRE AERO CLUB.—The Gliding Section of the Lancashire Aero Club succeeded in getting in some useful practice on Saturday and Sunday, August 2 and 3. On the Saturday, two flights were made, and then the meeting had to be abandoned owing to the weather. On Sunday, the practice was continued under more favourable conditions and a number of flights were made.

One incident demonstrated the comparative safety of gliding as a sport when one of the members, Mrs. Harry Millington, stalled a machine from about 60 ft., but escaped without any injuries and only slight damage to the glider. It is hoped to continue the practices each week-end, in view of the return match arranged to take place between the London Gliding Club and the Lancashire Club on September 20.

LONDON GLIDING CLUB.—On Sunday, July 27, the "Prüfing Match" against Lancashire was held and was a great success. The high average performance of the comparatively inexperienced Lancashire team combined with their great enthusiasm bodes well for the future of the Lancashire Aero Club (Gliding Section), and we look forward with pleasure to the return match which has been provisionally fixed for September 20 and 21 next.

Seventeen members joined the Gliding Camp which was held from July 27 to August 3 last, and in spite of adverse weather conditions (instruction impossible on two days owing to high winds, and showers on every other day) very great progress was made. On July 28 G. Humby qualified for his R.Ae.C. Glider Pilot's "A" Certificate, with a very fine flight, and he is believed to be the first person without previous aviation experience to qualify for this. No less than seven other *ab initio* pupils also qualified for their "A" Glider Pilot's Certificates during the week: Messrs. Smith, Moreland, Megaw, Robertson, Mrs. Bradbrooke and Messrs. Abdulla and Alan, in the order named. Mrs. Bradbrooke is the first qualified lady glider pilot in this country, and put up an excellent performance. Messrs. Lander and Williams also qualified, but both had previous aeroplane experience.

On July 30 a Kestrel Hawk with a broken wing (main spar and one rib) was found, and brought to the Club workshop for repairs. Pending A.I.D. inspection and a clearance slip for two feathers, it was housed in a Prüfling, but escaped twelve hours later, thereby clearly demonstrating the aerodynamical progress of a Prüfling over the old Maurice Farman Biplane (or the agility of a hawk compared with a thrush—Ed.).

On August 3 Mr. Humby qualified for his "B" Glider Pilot's Certificate and becomes thereby the first *ab initio* "B" licence Glider Pilot in the country. This fine record of ten "A" Certificates and one "B," all obtained in one week under adverse conditions, coupled with the fact that all four Club aircraft were kept in commission throughout the week, reflects very great credit upon the two voluntary instructors, F./O.s Buxton and McCulloch, who worked hard throughout the week, and also amply shows the need and possibilities of a national Gliding School where continual instruction would be available

throughout the summer. During the week the camp was visited by representatives of the Oxford, Warwickshire and Guildford Gliding Clubs and all were impressed by the progress that was being made. No account of the camp would be complete without some mention of the several fine flights made by Captain Needham in his machine the "Albatross," which appears to soar in winds as low as 12 m.p.h.

Two more members have now become private owners, as last week Mr. Lander bought a "Prüfling" and Mr. Beardmore a "Professor." Both these machines are now housed at Ivinghoe, and are available to approved members of the club. At the time of writing it seems probable that not less than six members of the club will visit Wasserkuppe to witness the Rhön Competitions, in which we hope to compete next year.

Owing to the number of members who are now beyond the instructional stage, there are a few vacancies for persons wanting gliding instruction, and those interested should write to the Hon. Secretary, The London Gliding Club, 44a, Dover Street, W.1.

THE BRADFORD GLIDING CLUB.—At a meeting held in the Bradford Mechanics' Institute on Friday, July 25, this club was formed.

The meeting was a great success, about 70 people attending. Sir Benjamin Dawson, Bart., a well-known manufacturer, and also a director of an aircraft factory, was elected the Hon. President, and Lieut.-Col. A. Gadie, J.P., who took the chair, was elected Hon. Vice-President.

The membership is divided into three sections:—

Flying members: entrance fee, £1 1s.; subscription, £1 1s.

Non-flying members: no entrance fee; subscription, 10s. 6d.

Junior members: no entrance fee; subscription, 5s.

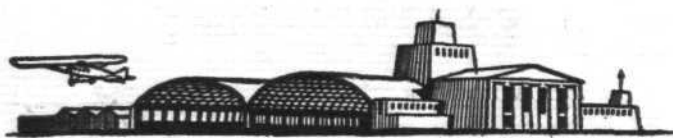
The Bradford *Telegraph and Argus* and the *Yorkshire Observer*, a joint local publication, is presenting the club with its first glider, a Dickson type, which is being built locally, and it is hoped that during the winter months the members of the club will build another. A constructional section is to be started with this object.

The British Gliding Association are being approached with a view to affiliating with this body.

The total membership to date exceeds 50.



THE POPPENHAUSEN: A two-seater glider now in operation by the London Gliding Club. (FLIGHT Photo.)



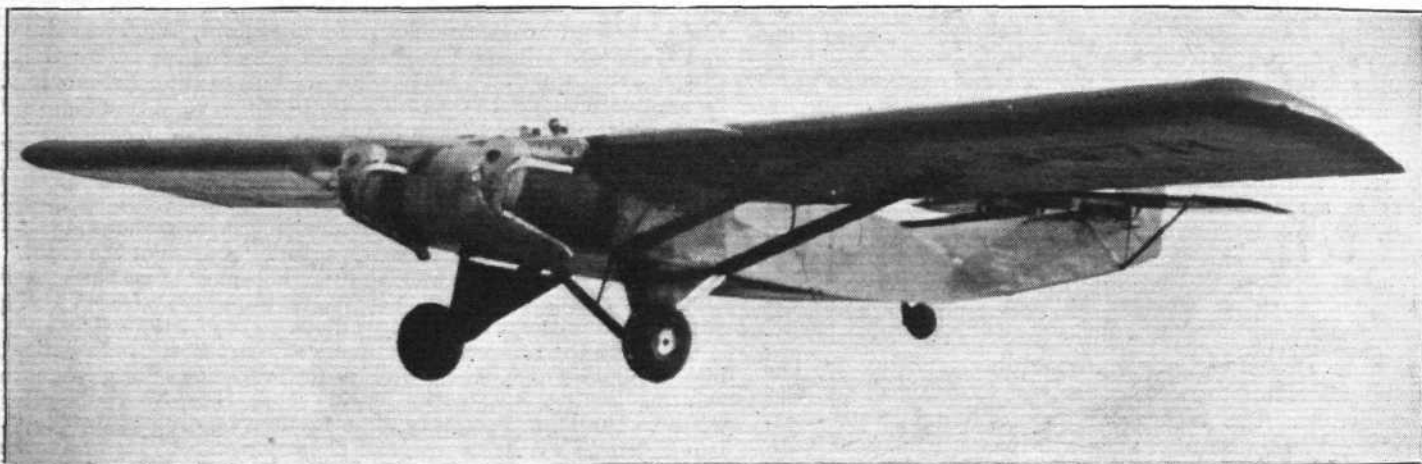
AIR TRANSPORT

THE BURNELLI "ALL-WING" AIR-LINER

PERFORMANCE tests have recently been carried out at Roosevelt Field, N.Y., with the new 20-passenger "all-wing" Burnelli monoplane, type UB-20. These have been conducted by Roger Q. Williams, who accomplished the New York-Bermuda-New York non-stop flight a little while back.

Performance data of the UB-20 so far compiled has proved very satisfactory; the machine has shown a low landing speed of 55 m.p.h., a cruising speed of 120 m.p.h., and a

fact the cabin of the Burnelli machine is more like a hotel lounge, with tables, comfortable arm-chairs, and settees.



The new Burnelli "UB-20" air transport in flight. It has an aerofoil-section fuselage accommodating 20 passengers, and is equipped with two 800-h.p. Packard engines, and Goodyear "air wheels."

The Burnelli machine should already be familiar to readers of *FLIGHT*, for we described a previous model in our issues for March 7 and March 28, 1929, and the new model, UB-20, which we illustrate here, is similar to it. Although described as an "all-wing" machine, we think "all-lift" would be a better term for the outstanding feature of this machine—which is, it will be remembered, its aerofoil-section fuselage. This, in the UB-20, gives a lift of 5 lb. per sq. ft., and thus contributes over 1,500 lb. lift to the total lift of the machine.

A further advantage of this aerofoil-fuselage is the extra large space (12 ft. by 18 ft.) it affords for passenger accommo-

maximum speed of 145 m.p.h. This latter will be considerably increased, as the airscrews fitted during the tests were set for 1,800 r.p.m., whereas the two Packard direct drive engines employed in this machine are designed for 2,100 r.p.m.

The average time for take-off was 8 seconds with a run of less than 150 yards. It will be noticed that the Goodyear Musselman "air wheels" are fitted—the largest yet used—and we understand that these have proved very satisfactory.

A number of these Burnelli machines are now under construction at the Keyport, New Jersey, factory.

THE AIR TAXI

Shilling a Mile Travel with Speed and Comfort

A READER of *FLIGHT* sends us the following views on air taxi travel, which we think may prove interesting:—

"When one hears a man babbling about the speed and comfort which he experienced on his motor trip to Scotland or Devonshire, or anywhere for that matter, the thought is immediately registered, 'Heavens! how ignorant the fellow is,' for you, who have flown, know full well the motorist does not know the meaning of the words 'speed and comfort,' in their strictest sense. Most people today have probably experienced flying in some way or another, if only by a 5s. flip from some seaside aerodrome during the holidays. But if you want to experience the real value and importance of air travel today the finest way is to take an air taxi. Many times has it been said that speed, in these days, annihilates distance—there is concrete evidence of that in the fact that one can leave London one Sunday morning and have lunch in India the next or in the fact that a mere slip of a girl suddenly makes up her mind to fly to the other side of the world and in less than no time there she is in Australia. However, mention of these long-distance flights is dragging me away from my subject.

"Although I have done a fair amount of flying by the

ordinary Continental air routes, it was not until just recently that I sampled the extraordinary efficiency and simplicity of the air taxi. My experience in this direction came about in a rather peculiar manner.

"A short time ago—at the time of the Grand Prix road race at Le Mans—I called on my friend, Mr. J. K. Carruth, of the Bentley Company, to wish success to his cars in the race on the following day—Sunday. Imagine my astonishment when he informed me that he was not going to the race as he had been so jammed with business in London that there was no time to go. 'Nonsense,' I said, 'fly over and I'll come with you.' The suggestion had an immediate appeal, and in far less time than it takes to tell we were in communication with Croydon Aerodrome and arrangements were made for a Desoutter monoplane to be at our disposal at dawn on the Sunday morning. So it was that at 4.30 a.m. we took off from Croydon and about an hour later we dropped down into Calais, where our pilot saw to such necessary matters as fuel and our passports. After a stay of half an hour, during which time we obtained some welcome refreshment, we were in the air again and, flying at a height of about 2,000 ft., arrived at Le Mans, after circling over the course, at 8.25 a.m.

Apparently we were not the only people who had decided to use the small airplane as a means of travel, for there were five or six 'Moths' and similar craft 'anchored' on the landing ground, which proved the popularity of the modern method of quick—and reasonable—transport. But for the fact that we had to wait for some time for that 'antiquated' vehicle, the motor car, to convey us to the course we should have had much more time at our disposal to watch the racing.

"Notwithstanding this delay, we spent some seven hours on the course, and incidentally, had the capital reward for our journey of seeing a British car carry off the honours in this gruelling event. Having seen all we wanted to see, our thoughts turned towards home, and sharp at 5.15 p.m. we bid *au revoir* to Le Mans and arrived at Calais once more, at 7.30. A halt of some 20 minutes was made and our 'magic carpet' was again transporting us through the clouds. A quarter of an hour was sufficient to bring us over Dover, and by 9.15 p.m. a safe landing had been made at Croydon and we were refreshing ourselves at my home in Purley.

"Reference has been made to the simplicity of this journey.

The machine which we chartered was comfortable—there were two seats beside that of the pilot—there was comparatively little noise compared with that generated by the heavy air liners. Again, there was no trouble with passports or Customs officials, and, what was to my mind very important, especially to the man using this means of travel for business, we arrived immaculate—a far different state of affairs than would have been the case had we travelled the same distance in an open car.

"Now the cost. A matter of £40. A lot of money you may say, but, taking all things into consideration, this is no more than would be charged for the hire of a really first-class car for a return trip to Scotland. In all we travelled some six hundred and thirty miles in a little over six flying hours, at a cost of a shade over a shilling a mile.

"Whether I shall live to see the day when the Atlantic has been completely conquered by the airplane I do not know, but certainly any other future journeyings of mine which necessitate speed will be by the taxi of the air. I look forward to the day when the first air taxi rank will be established in Hyde Park."

W. W. N.

NEW AUSTRALIAN GOLDFIELDS AIR SERVICE

ALWAYS anxious to serve the community, West Australian Airways has been investigating the creation of a new service. It is generally realised on all sides that a revival of gold mining would be greatly in the interests of the State and Commonwealth, and anything which will assist toward that end will indirectly benefit the whole population. It is appropriate, therefore, that the company should seek ways and means of providing frequent and rapid means of communication to some of the prominent mining fields of the State, which are at present only to be reached after tiresome travel over many days. For instance, to reach Wiluna occupies three days train travelling, and in the summer time, with the thermometer registering between 100 and 120 deg., it is invariably anything but a pleasant trip. With an aeroplane, the trip could be made in a morning, and the temperature could be made to suit the passenger, for at 5,000 ft. the air is usually 20 to 30 deg. cooler than at ground level.

Two alternatives have been investigated. One is to leave Perth on a Wednesday morning and, touching at Mount Magnet, Meekatharra and Wiluna, arriving at the last-named centre

in the afternoon. Leaving the following morning, the machine will travel via Lawlers and Leonora to Kalgoorlie, where it would arrive in time for lunch. On Thursday afternoons the machine would leave Kalgoorlie for the new goldfield at Edjudina, returning that evening. On Friday morning, the machine would take off from Kalgoorlie for Wiluna, via the Leonora and Lawlers route, and on Saturday fly from Wiluna to Perth via Mount Magnet.

The second alternative is to run a frequent service between Kalgoorlie and Wiluna only, with calls at Meekatharra and Mount Magnet or other centres as required, and with additional trips to Edjudina.

There are many mining men whose duty it is to make frequent visits to fields in these areas and who deplore the great loss of time occasioned by travel. To them such a service should prove an inestimable boon, while in the matter of mail and freight service, it should serve the same purpose and be just as popular as the North-West aerial mail which has developed from a small beginning to something which the people of those parts could not possibly do without now.

Flying in the Dutch East Indies

THE K.N.I.L.M. service of "Lynx"-engined Fokkers recently completed 18 months running in the Dutch East Indies. During this period the machines flew 4,849 hr., covering a distance of 484,900 miles, which is equivalent to nearly 20 times round the world. Altogether they conveyed 21,703 passengers, *i.e.*, nearly 4,000 more than the entire European population of Bandoeng. The cargo-transport amounted to 203,983 lb. and the postal transport

to 9,784 lb., this being equivalent to about 341,290 letters, or 700 letters daily.

A New Zealand Air Transport Company

NEW ZEALAND AIRWAYS BOLTING, a company financed entirely by New Zealand capital, is expected to start air passenger services between Auckland and Wellington, and Wellington and Invercargill; Canadian-built flying-boats will be employed.



FROM IRAQ: This is the "B" Squadron (A.R.S.), Air-craft Depot, R.A.F., Iraq, Football Team. They were the winners of the Iraq R.A.F. Senior Football Cup, 1929-30 season, and include, from left to right (back row), Capt. V. Cheesman (Sec.); Sgt. A. S. Read; Sgt. F. E. Whyte; L.Ac. T. L. Davies; L.Ac. E. C. Hughes and Cpl. C. J. Young. (Seated)—Sq.-Ldr. E. A. Fawcus (O./I.C. "B" Sq.); L.Ac. F. J. Gavin (Capt.); Fl.-Lt. C. H. Masters; Ac. O. M. Jones. (Front row)—L.Ac. G. P. Hall; Ac. A.N. Stacy and Ac. J. H. Keay.

AIRISMS FROM THE FOUR WINDS

Kingsford Smith Back in Europe

WING-COMDR. KINGSFORD SMITH, accompanied by Mr. John Stannage (who was wireless operator during the recent Atlantic flight of the *Southern Cross*), have returned to Europe in the N.G.L. liner *Europa*, which called at Southampton on July 29. They did not land there, but proceeded to Bremen, whence they flew to Amsterdam. Here they were met, on August 1, by Mr. Van Dyk (second pilot), the American Minister, and representatives of the Dutch Air Ministry, the Fokker Co., K.L.M. Air Lines, and thousands of spectators. Unfortunately, Wing-Comdr. Kingsford Smith had to undergo an operation for appendicitis on August 4, and although he is making good progress, his solo flight to Australia has had to be postponed.

Mr. Van Dyk also Home

MR. VAN DYK, who was Kingsford Smith's second pilot on the recent Atlantic flight in the *Southern Cross*, was given an enthusiastic welcome on his return to Amsterdam on July 28. He was greeted by the Minister of Public Affairs, who conferred the Knighthood of Orange and Nassau on him, and by colleagues of the K.L.M. Air Lines and many thousands of the public. There were great aviation demonstrations during the whole afternoon by fifty military and civil planes.

Return of Capt. Saul

CAPTAIN PATRICK SAUL, the Irish navigator of the *Southern Cross*, arrived back in Ireland on the Cunard liner *Laconia* last Sunday. He was met at Queenstown by Col. Chas. Russell and several other members of the Irish Aero Club. In an interview to the Press he said that he would be willing to take part in another Atlantic flight and hoped to have an all-Irish crew. On his arrival at Baldonnell aerodrome, co. Dublin, he was greeted by a large crowd, and only after a good deal of speech-making was he allowed to escape.

An informal reception and dinner was given to Capt. Saul in the evening by members of the Irish Aero Club. It has now been announced that the Governor-General of the Irish Free State, Mr. James McNeill, has agreed to preside at the banquet to be held in honour of Capt. Saul on the 14th inst.

An Australia-England Flight

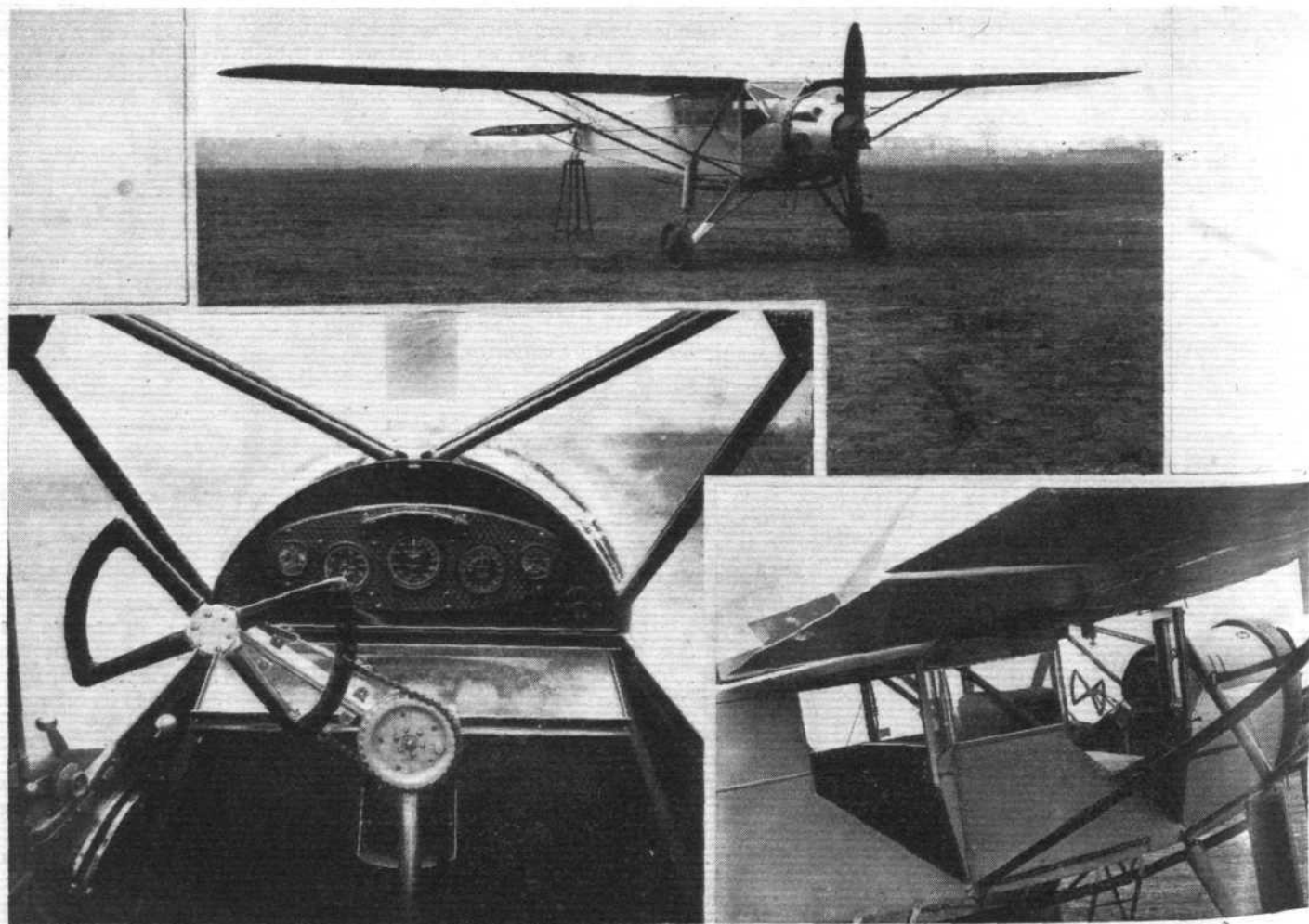
MR. ANDREW CUNNINGHAM, a member of the New South Wales Aero Club, left Sydney—in, it is reported, an Australian-built biplane—for England, on July 31. He reached Charleville the next day, and left Wyndham for Bima on August 5. At the time of writing, no news of his arrival there has been received.

Berlin-Chicago in a Light Plane

THE two German pilots, Wolf Hirth and Osen Weller, who are attempting a flight in a Klemm light plane from Berlin to Chicago via Iceland and Greenland, arrived at Kaldardarnes, Iceland, on August 1, and at Reykjavik on August 3. It is reported that as there is no landing place at Julianehaab, Greenland, the flight has been abandoned, and that they are sailing with their machine to Montreal.

World Flight Fails

AN attempt to better the time for a round-the-world flight (established by the *Graf Zeppelin*) by Mr. John Mears—who created a record for round-the-world travel by ordinary means some years ago—has ended in failure. He set out from New York on August 2, in his Lockheed "Vega" monoplane, *City of New York*, piloted by Mr. H. J. Brown, and flew to Harbour Grace, Newfoundland. Later, when attempting to take off for Ireland, the heavily-laden machine struck an obstacle on the runway, swerved into some rocks and bushes, and was completely wrecked. Pilot and passenger, together with their mascot Sealyham puppy, escaped uninjured.



FOR "FEEDER LINE" OR PRIVATE OWNER: The De Havilland "Hawk Moth" (Moth Six) is a four-seater with provision for being turned into a six-seater for flights of shorter range. The machine shown is fitted with "Lynx" engine, but can also be supplied fitted with the Wright J.6. With either power plant it can be supplied as a seaplane. Note the excellent view from the pilot's cockpit. (FLIGHT Photos.)

AIR MINISTRY NOTICES

AIR MINISTRY NOTICE TO AIRCRAFT OWNERS AND GROUND ENGINEERS

A. Discontinuous Elevators. B. Covering of Wooden Airscrews. C. Fireproof Bulkheads. D. Protection of Dual Controls

The attention of all aircraft owners and ground engineers is drawn to the fact that the following requirements of Air Publication 1208 will be brought into effect in respect of all applications for Certificates of Airworthiness as follows:—

- (i) In respect of all applications for type Certificates of Airworthiness as given at (a).
- (ii) In respect of all applications for subsequent Certificates of Airworthiness as given at (b).

A. Discontinuous Elevators

1. The requirement of the additional sub-paragraph of paragraph I, of Design Leaflet B.4 is as follows:—"Discontinuous Elevators.—The use of elevators in the same plane divided into separate sections which are not positively and rigidly coupled together is prohibited on aircraft in the aerobatic category."

2. The above requirement will be brought into effect as follows:—

- (a) As from July 17, 1930.
- (b) and (c) As from October 17, 1930.

B. Covering of Wooden Airscrews

1. The requirement of paragraph VI of Design Leaflet B.8 is as follows:—"Covering.—The surface of wooden airscrews must be protected by varnish, varnished fabric, cellulose lacquer, or any other approved protective."

2. The above requirement will be brought into effect as follows:—(a), (b) and (c) As from July 17, 1930.

C. Fireproof Bulkheads

1. The requirement of sub-paragraph (i) paragraph I of Design Leaflet G.1 is as follows:—" (i) A fireproof bulkhead possessing at least equivalent fire-resisting qualities to the following must be fitted in order to insulate the engine bay from the rest of the aircraft:—A sandwich consisting of best quality asbestos millboard of a minimum thickness of 3/32 in., held between aluminium or duralumin sheets, 24 S.W.G. thick, securely riveted together. In addition, adequate protection must be provided for the underside of the fuselage."

2. The above requirement will be brought into effect as follows:—(a) As from July 17, 1930. (b) and (c) As from October 17, 1930.

3. N.B.—The special concessions regarding the fitting of fireproof bulkheads to aircraft with rotary engines, granted by Notice to Aircraft Owners and Ground Engineers No. 26 of 1929, still remain in force.

D. Protection of Dual Controls

1. The requirement of sub-paragraph (ii) of paragraph I of Design Leaflet B.6 is as follows:—" (ii) Adequate provision must be made to prevent the likelihood of the passenger(s) interfering with any of the controls of dual control aircraft when being used for other than training purposes."

2. The above requirement will be brought into effect as follows:—(a) As from October 17, 1930. (b) and (c) As from January 17, 1931.

(No. 24 of 1930.)

Ground Engineers Licensed in Categories "A" and "C": Distinction between Duties

1. The Air Navigation Directions, 1928 (A.N.D. 7) stipulate that the certification of an aircraft, in accordance with paragraph 8 of Schedule II

of the Air Navigation Order, shall be made, in respect of the aircraft itself by a ground engineer licensed in category "A," and in respect of the engines and engine installations, by a ground engineer licensed in category "C."

2. When a certificate of safety for flight for any aircraft in respect of both aircraft and engine(s) is given by one ground engineer licensed in both "A" and "C" categories no question arises in respect of the responsibility incident to one or other of the duties concerned. The question of the limits of responsibility does arise, however, when the certification is made by two separate individuals licensed in the separate categories.

3. In order that there shall be no doubt regarding the distinction between these duties, the following instructions are promulgated:—

(a) The inspection to be performed by the ground engineer licensed in category "A" includes:—

- (i) the whole of the aircraft structure (including fuselage or hull, wings, ailerons, slots, tail-plane, elevators, fins, rudder, undercarriage, struts, bracings, and airscrew) for condition and correct assembly;
- (ii) all flying controls for assembly and correct functioning;
- (iii) the flying instruments (aneroid, airspeed indicator, turn indicator and compass, where applicable) for installation and correct functioning;
- (iv) aircraft equipment (safety belts and electrical services with their batteries, wiring and bonding for W/T) for correct installation.

(b) The inspection to be performed by the ground engineer licensed in category "C" includes:—

- (i) the whole of the engine installations, including the engine with its accessories and the fuel, oil, cooling, ignition and exhaust systems for condition, installation, correct functioning, and power output;
- (ii) all controls connected with the engine and its ancillary systems for assembly and correct functioning;
- (iii) the instruments relating to the engine and its installation (revolution indicator, pressure and contents gauges, and temperature indicator) for installation and correct functioning;
- (iv) the airscrew for correct attachment and smoothness of running.

(No. 25 of 1930.)

AIR MINISTRY NOTICE TO AIRMEN

Flight on Croydon-Lympne Air Route in Conditions of Bad Visibility

1. The attention of all pilots is drawn to Section 12 of "The Air Pilot," Vol. I, and to the additional rule defined below:—

When the specified conditions of bad visibility prevail on the Croydon-Lympne air route, pilots of aircraft not equipped with radio shall, before taking off to fly over any portion of that route, request the official in charge of the aerodrome of departure to advise by telephone either the chief aerodrome officer, Croydon air port, or the aerodrome officer in charge, Lympne air port, of the particular alternative route [i.e., one of the three routes given in (i), (ii), or (iii) of Section 12 (1) of "The Air Pilot," Vol. I] which he intends to follow.

The official in charge of the aerodrome of departure should ensure that such information, together with the time of departure of the aircraft, is telephoned to Croydon or Lympne, as the case may be, immediately the aircraft has left.

2. "The Air Pilot," Vol. I, Section 12, is affected and will be amended in due course.

(No. 20 of 1930.)

IN PARLIAMENT

Schneider Trophy Race

MR. MONTAGUE, on July 16, in reply to Mr. Horrabin, said, I understand that only one entry, from Italy, has been received by the Royal Aero Club, the body responsible for dealing with entries for the Schneider Trophy Contest, and that for reasons which it has already announced in the Press the Royal Aero Club has been unable to accept the entry as complying with the prescribed conditions. As to whether my Department will give consideration to the advisability of abolishing the conditions attached to the loan of the Supermarine S.6 and Gloucester-Napier seaplanes, no application for the loan of aircraft has yet been received by the Air Ministry, and the Minister for Air is not prepared to consider whether it would be possible to vary in any respect the conditions already announced until some definite proposals are before him.

MR. HARDIE: Does my hon. Friend think there is any value at all in this race?

MR. MONTAGUE: I certainly think so, and I think the value has been proved in the past.

Fleet Air Arm

MR. AMMON, on July 17, in reply to Capt. Bullock, said the present number of aircraft attached to the British Fleet air arm is 141. The numbers attached to the Fleet air arm of the United States and Japan are not accurately known, and therefore cannot be given.

Bombing Ranges

MAJOR GLYN, on July 30, asked the Under-Secretary of State for Air if he will be willing to arrange for a conference on the ground, tentatively selected, on the Downs of North Berkshire as a practice bombing area in order that officers of the Royal Air Force and officials of the Air Ministry may meet representatives of the trainers and owners of race horses and other persons engaged in the care and provision of forage for these race horses whose training quarters will have to be moved from the district if this project is persisted in, thus causing unemployment and disturbing what is a prosperous local industry?

BRIGADIER-GENERAL CLIFTON BROWN asked whether sanction has been given to the proposal to utilise for bombing practice a stretch of the downs near Lambourn of great beauty, bearing in its midst and on its margin historical

monuments of exceptional interest; and, in view of the protests made by county councils and other authoritative local bodies, will he reconsider the matter?

MR. EDE asked whether, in view of the public protests by the Berkshire Joint Regional Planning Committee against the proposed formation of a bombing practice ground at Lambourn, it is intended to proceed with the scheme?

MR. MONTAGUE: Yes, the Air Ministry is prepared to send representatives to a meeting as suggested by the hon. and gallant Member. I would like to point out, however, in view of the widespread misconception which seems to prevail, that all that has happened to date is that a preliminary and provisional reconnaissance has been made of this, as of other areas, and that in any event the proposal is one for the use, not of live, but of practice bombs, which merely make a puff of smoke and can be heard only a very short distance. The small effect of these practice bombs, which would do no damage to a person standing five yards from where they fall, and only make an indentation in the ground some three inches in diameter, could be demonstrated at this meeting. I can give an assurance that the Government will not use compulsory powers to acquire the land, against the wishes of everybody in the district, until Parliament again meets.

MAJOR GLYN asked the Under-Secretary of State for Air how many areas there are in Great Britain reserved for the use of the Royal Air Force for practice in bomb dropping with live bombs of all kinds; what is the danger zone of these targets; whether they are used throughout the year; if not so used, in what months is the training of pilots in bomb dropping usually carried out; and whether it is necessary to find land removed from the ordinary military training areas?

MR. MONTAGUE, further in answer to Major Glyn, said there are in Great Britain five bombing ranges, where high explosive bombs are dropped. Practice bombs, that is, bombs which only emit smoke, are dropped also at these ranges, and there are, in addition, four ranges at which only practice bombs are dropped. The danger area varies with the height at which practice is carried out and the type of bomb used. Most of the ranges are used throughout the year, but practice is mainly carried out during the summer months. No bombing takes place at week-ends or on public holidays. Land in military training areas would be used if it were suitable and available within the area in which a bombing range is required.

Schneider Trophy Contest

THE Royal Aero Club, in reply to inquiries, announces that it has returned only entries that have not conformed to the unalterable conditions governing the Schneider Trophy Contest, 1931, issued by the F.A.I. in January, 1930.

There is no foundation, it adds, for any suggestion that the Royal Aero Club declines to organise the Contest for 1931.

Air Navigation Licences

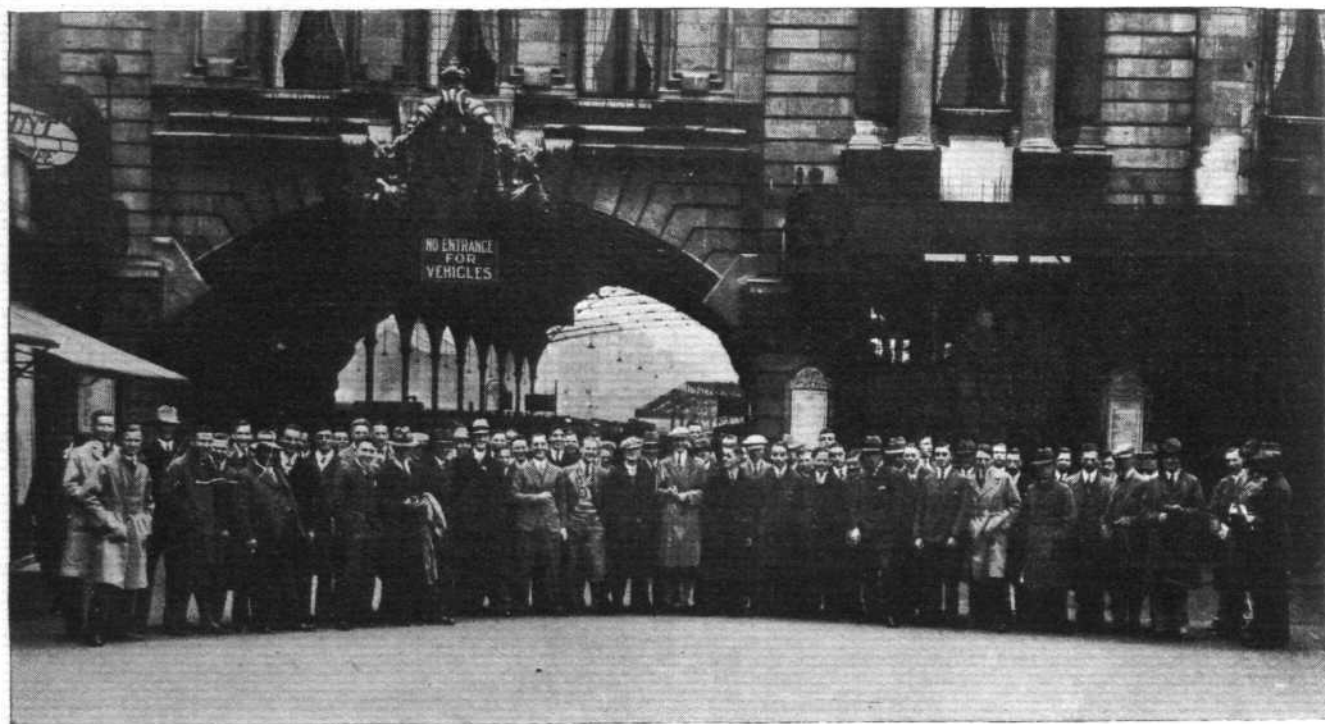
THE following candidates were successful at the examination for Air Navigation Licences, Second Class, held at the Air Ministry, on July 7, 8 and 9, 1930:—Mr. R. A. C. Brie, Flight-Lieut. M. H. Findlay, Mr. T. W. Morton, Mr. B. B. Muckleston, Flying-Officer G. J. Powell, Flight-Lieut. A. R. Prendergast, Mr. F. H. Robinson, Mr. L. H. Stace, Mr. H. G. Travers, Mr. V. G. Wilson.

THE HALTON R.A.F. APPRENTICES' BELGIUM GUIDE

LAST year (in our issue for August 22, to be exact) we had pleasure in recording a few words of appreciation regarding a really very excellent hand-printed book which had been entirely produced by the Halton Aircraft Apprentices, in connection with their annual conducted holiday tour of Belgium and France.

We thought last year's effort was a praiseworthy one indeed, with its 60 pages of "jelly"-printed articles, poems, maps, sketches, etc., all beautifully executed (in colours) and full of interest. This year's Guide—for it is intended to serve as such, and not merely as a souvenir—just to hand, which has grown to eighty-odd pages, is, we think, even better still.

others. . . . The greatest compliment that any party visiting a foreign country can receive is surely a personal message from the King of that country; but to us King Albert is more than a king—he is a soldier who has both fought in the trenches and commanded his own Army, he is an aviator and a friend of our Royal Air Force, and he is King of a nation which has never ceased to be an ally of Great Britain throughout the 100 years of its existence as an independent kingdom. . . . As a small token of our gratitude for this personal message, we take the liberty of dedicating this handbook to 'Belgium,' coupled with the name of 'His Majesty King Albert.'



OFF TO BELGIUM: The merry party of Halton R.A.F. apprentices who left Victoria on July 30 for their annual tour of Belgium and France.

Some of the sketches—of buildings, etc.—are very fine, and the text, both instructive and amusing, possesses no small amount of literary merit. But perhaps the feature of this year's Guide consists of a message, on the frontispiece, from King Albert of Belgium, which, translated, says:—

"In remembrance of the friendship which, during the Great War, united the British and Belgian Armies, I wish to welcome to our country the young Aircraft Apprentices from Halton."

As the editor points out: "This letter is an honour which we feel sure will be appreciated not only by our party, but by all Halton personnel—and it will certainly serve to mark out the Halton Belgium Tour of 1930 as being different from all

As regards this year's tour, the party, about 80 strong, left Victoria station on July 30 *en route* for Ostende and Bruges, and during the ensuing six days the following programme had been arranged: July 31, Bruges, Zeebrugge; August 1, Battlefields tour; August 2 (free); August 3, Brussels, Antwerp; August 4, Visit to aerodrome and Waterloo; August 5, Grotto of Han; August 6, Brussels to London. Various amusements had been planned for the evenings.

In conclusion, we have been asked to emphasise the fact that the "Halton Belgium Tour" guide-book is *not* for sale, and copies cannot be obtained at *any price*! With the exception of a few special complimentary issues, sufficient copies for the use of the party only have been printed.

PERSONALS

Married

The marriage took place quietly, at Holy Trinity, Brompton, on July 23, of Wing-Commander DERMOTT LANG ALLEN, A.F.C., R.A.F., third son of Mr. Robert Allen, St. Ewolds, Jersey, and of the late Mrs. Allen, and Mrs. BEATRICE HAMILTON UTTERSON, widow of Lt.-Col. H. K. Uttersen, The Dorset Regt., and elder daughter of Sir Claude Hill, Lieut.-Governor of the Isle of Man, and Lady Hill.

The marriage arranged between Flight-Lieut. LAMBERT EARDLEY-WILMOT, R.A.F., younger son of Maj. and Mrs. H. Eardley-Wilmot, and ANGELA CLARE GERTRUDE, second daughter of the late Col. and Mrs. A. H. VINCENT, of Summerhill House, Castle Connell, co. Limerick, took place quietly at Dunmow on July 14.

The marriage took place on July 17, at St. Mark's, North Audley Street, of Sqdn.-Ldr. WILLIAM HASTINGS DE WARRENNE WALLER, R.A.F., second son of the late Mr. and Mrs. Albert Waller, of Shannon Grove, Banagher, King's County, and Miss ELISABETH HOPE LAMBE, daughter of the late Mr. H. E. Lambe and of Mrs. Lambe, of Grove House, Semley, Shaftesbury, and step-daughter of Air Vice-Marshal C. L. Lambe. Senior N.C.O.s of the Administrative Wing, R.A.F., Halton, formed a guard of honour as the bride and bridegroom left the church.

LIEUT.-CMDR. WILLIAM HUTCHESON WATT, R.N.R., the Royal Airship Works, Cardington, was married on July 21, at St. Mary's Church, Goldington,

to FRANCES MARY RUSSEL, daughter of Mr. and Mrs. J. E. RUSSEL HALL, Devon Road, Bedford.

On July 10, at St. Peter's, Yateley, Flight-Lieut. CHRISTOPHER HOLT STILWELL, second son of the late Geoffrey Stilwell and of Mrs. Stilwell, Thriftswood, Yateley, to FREDIA GABRIELLE, elder daughter of Sir FREDERICK and LADY GAUNTLETT, of Stuartfield, Weybridge.

To be Married

An engagement is announced between Mr. WILLIAM ROY BAIRD, R.A.F., eldest son of Mr. and Mrs. Thomas Baird, of Howth Road, Dublin and MINERVA CUMMING, elder daughter of Mr. and Mrs. DAVID GRAY, of Puxton, Inverness.

The engagement is announced between ALEC BECK, D.F.C., late Captain, 60 Squadron, R.A.F., only son of Mr. and Mrs. G. M. Beck, of Old Letton Court, Hereford, and Argentina, and JOAN, only daughter of Mrs. R. PIERON-WARLOW, The Cap House, Pontrilas, Herefordshire, and grand-daughter of the late Col. Turbervill, Ewenny Priory, Bridgend.

The engagement is announced between ROBERT MACINTYRE GORDON, D.F.C., M.B., Ch.B., second son of the late Mr. A. M. Gordon and Mrs. Gordon, of Glasgow, and CECILY COTTINGHAM, youngest daughter of the late Mr. E. H. RUNNACLES and Mrs. RUNNACLES, of Branwoods, Great Baddow, Chelmsford.

The marriage arranged between Mr. W. H. MERTON, R.A.F., and Miss B. H. BECKFORD KIRBY will take place in Winchester Cathedral on Monday, September 22, at 2 o'clock, by permission of the Dean.

THE ROYAL AIR FORCE

London Gazette, July 29, 1930

General Duties Branch

The follg. are granted temporary comms. as Flying Officers on being seconded for duty with Royal Air Force (July 15):—Lt. L. O. Welch (N. Stafford Regt.); Lt. L. S. Cundell (Lan. Fus.); Sec. Lt. J. S. Hindmarsh (R. Tank Corps).

The follg. Pilot Officers are promoted to rank of Flying Officer (June 28):—C. R. Crow, W. S. Monroe.

Sqdn.-Ldr. J. L. Vachell, M.C., is granted acting rank of Wing Commander (unpaid) (July 30); Group Capt. T. G. Hetherington, C.B.E., is placed on half-pay list, Scale A (July 25); Wing-Comdr. D. Harries, A.F.C., is placed on half-pay list. Scale A, July 27 to Sept. 7, inclusive: Flying Officer W. M. Moore is placed on retired list on account of ill-health (July 29); Flying Officer G. V. T. Thomson is transferred to Reserve, Class A (July 27); Flight Lt. P. I. V. Rippon relinquishes his short service commn. on completion of service (July 18); Flying Officer C. H. Schofield (Lt. The Welch Regt.) relinquishes his temporary commn. on return to Army duty (July 26). The short service comms. of the follg. Pilot Officers on probation are terminated on cessation of duty:—W. R. Farley (July 9); R. C. Stuckes (July 26).

Dental Branch

Wing Commander C. L. Colbran, L.D.S. (Lt.-Col. Army Dental Corps) is granted a permanent commn. in this rank (July 1); Capt. G. A. Ballantyne, D.F.C., L.D.S., R.C.S. (Army Dental Corps) is granted a permanent commn. as Flight-Lieutenant (July 1).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch.

Group Captain R. E. C. Peirse, D.S.O., A.F.C., to H.Q., Coastal Area, for Air Staff duties, on transfer to Home Estab., 16.6.30.

Squadron Leaders: A. T. Williams, O.B.E., to H.Q., Coastal Area, 21.7.30. B. McEntegart, to R.A.F. Base, Calshot, 8.7.30.

Flight Lieutenants: T. W. S. Brown, to No. 36 Sqdn., Donibristle, 21.7.30. G. A. Hadley, to R.A.F. Base, Gosport, 14.7.30.

Flying Officers: H. M. G. Parker, to R.A.F. Base, Calshot, 8.7.30. G. C. Butler, to R.A.F. Base, Calshot, 8.7.30. R. L. Bennet, to R.A.F. Base, Calshot, 8.7.30. D. F. Satchwell, to R.A.F. Base, Calshot, 8.7.30. J. G. Llewellyn, to R.A.F. Base, Gosport, 8.7.30.

Pilot Officers: N. R. G. Hunter, to Central Flying Schl., Wittering, 19.7.30. M. V. de Satge, to No. 605 Sqdn., Castle Bromwich, 21.7.30. The following

The follg. are granted non-permanent comms. as Flight-Lieutenants (July 1):—Flight Lt. R. G. J. Charlesworth, L.D.S. (temp. Capt., General List, Army, Dental Surgeon); Flight Lt. H. I. Clapperton, L.D.S. (temp. Capt., General List, Army, Dental Surgeon); Flying Officer P. M. Margand, L.D.S. (temp. Lt., General List, Army, Dental Surgeon).

F. B. Sumerling, B.D.Sc., is granted a non-permanent commn. as Flying Officer with effect from and with seny. of July 9.

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

G. F. Phipps is granted a commn. in Class AA (ii.) as a Pilot Officer on probation (July 14). The follg. Pilot Officers on probation are confirmed in rank:—L. Swan (June 26); F. H. Peers (July 22); G. U. Hayns (July 24).

Flying Officer W. J. Brett is transferred from Class A to Class C (July 23); Flying Officer E. I. C. Wyllie is transferred from Class AA (ii.) to Class C (Feb. 7). The comms. of the follg. Pilot Officers on probation are terminated on cessation of duty:—J. P. R. Oakes (July 2); P. R. Q. Henriques (July 12).

Accountant Branch

Flying Officer J. C. Christian, M.C., relinquishes his commn. on completion of service (Sept. 5, 1929).

AUXILIARY AIR FORCE

General Duties Branch

No. 603 (CITY OF EDINBURGH (BOMBER) SQUADRON.—The follg. Pilot Officers to be Flying Officers:—A. Wallace (March 26); A. M. Mitchell (March 29).

are all posted to R.A.F. Depot, Uxbridge, on appointment to Short Service Comms., with effect from 12.7.30:—R. Hanson, H. J. L. Hawkins, A. H. Hole, T. A. Jefferson, A. F. McKenna, D. H. Marsack, J. W. Martin, F. G. Mason, C. L. Monckton, M. A. Payn, H. N. G. Ramsbottom-Isherwood, I. G. Ross, C. B. Smith, E. C. Smith-Ross, C. P. Villiers.

Stores Branch

Wing Commander F. A. Baldwin, to R.A.F. Depot, Uxbridge, 14.7.30. Squadron Leader H. L. Woolveridge, to H.Q., Air Defence of Great Britain, Uxbridge, 18.7.30.

Flying Officers: F. H. Bedford, M.C., M.M., to R.A.F. Depot, Uxbridge, 14.7.30. R. A. London, R.C.A.F., to Home Aircraft Depot, Henlow, 1.8.30.

Medical Branch

Flight Lieutenants: C. P. O'Tooly, to R.A.F. Practice Camp, Catfoss, 22.7.30. P. J. Nyham, to R.A.F. Depot, Uxbridge, 25.7.30.

With Byrd at the South Pole

Few finer films with flying as the main theme can have been shown than this. At present it is on at the Carlton, in the Haymarket, and is well worth attention from everyone.

At the start the basic difference between the two Poles is lucidly explained in that at the North Pole or in the continent around there is life in many forms, and even flowers in the summer, while at the South Polar continent there is nothing at all, except an ice plateau with an average height of 7,000 ft. above sea level.

The winds and blizzards at the South are incredible, and may often reach 100 m.p.h., and for nine months of the year it is practically in darkness.

The film opens with a talk from Commander Byrd, in which he dilates on the debt which his expedition owed to those who had gone before, especially Scott, Shackleton and Amundsen, and he also pays tribute to the great help which was accorded him by everyone, and in particular by New Zealand.

The Expedition carried two cinematographers, and over thirty miles of film were exposed. Some magnificent scenes were obtained on the journey out in the auxiliary barque, and were taken from the mast head and looking down at the ship below.

It almost seems a pity that throughout the whole expedition an air of acting for the movies has been woven in. Instead of the cameramen just recording the everyday work and scenes, they have very obviously staged a great number of them, with the result that an entirely false atmosphere is built up, which makes one feel that this is merely a studio edition of the epic occasion.

However, one must allow for an entirely different outlook on the part of the average American audience, and of an audience over here, and there is no doubt that even with these staged scenes it still remains a magnificent picture.

The views of preparations at the Great Barrier Reef, the blizzards which delayed the erection of the main base, the start of the actual flight to the Pole, and finally, actual scenes taken from the machine during that flight are ones which will never be forgotten. One cannot help but admire the camera operators for their initiative and resource, and for getting the pictures they did under such conditions. The final view of the barque as she arrives back through a mist to take the party home again is an absolute masterpiece of artistic photography.

One criticism we must level at the presentation of the film, and that is regarding the music which is footling in

the extreme. Why must we be condemned to such horrible selections, which even bray in competition with the announcer at some points? If music must be played, why not have real orchestral music of an appropriate character, softly played; it seems that it is a *sine qua non* of all synchronised films to have such impossible mechanical noises thrust upon us.

"Young Eagles"

AMERICA has not been behindhand in seizing the opportunity which aviation offered to increase the selling powers of their films, and many are the films which have come over here lately with aviation as their theme. Generally, this has been grossly misused, and we have had some sloppy sentiment woven into an impossible aeronautical atmosphere, but there have been one or two well-arranged films, amongst the ruck, such as "Flight," and now the more recent "Young Eagles."

This latter is by no means as good as "Flight." The situation is highly improbable, to say the least of it, and the expected effect of aircraft in the film has been largely nullified by lack of attention to detail. Quite how those responsible expect the present-day audience, which is rapidly gaining a fair knowledge of aviation, to swallow a story of the late war in which the machines used are the latest type American Navy fighters, is hard to understand. The same story, which brings in the inevitable master spy and air duel with the hero could have equally well been written around some hypothetical war, or even the next war—assuming that in this case, America came into it early—but no, they must needs stick to the all too hackneyed scenes of Paris in 1918, and the hero doped while on leave by the girl who loves him, but who sacrifices her love to duty.

The presentation of the aerial combat scenes is good; definitely so, if one makes due allowance for the German being in what appears to be Curtis Hawk or similar aircraft with a Pratt and Whitney engine; and some of the flying is superb, especially the crashes for, following Dick Grace's admirable book, we can assume that these are real. We do not think that many will be disappointed when they see it.

Soon, no doubt, we shall have another film like "Flight," which gets away from the old war stories, and can therefore justifiably use modern aircraft, and in consequence will at once gain much more scope for strong treatment. As a talkie, the film is average. The representation of the noises of the aircraft hardly seems natural, but that may well be the distortion which generally seems to accompany such films.

MODELS

THE MODEL AIRCRAFT CLUB. (T.M.A.C.)

THE Annual General Meeting will be held at the Junior Institution of Engineers, on Tuesday, September 2, at 7 o'clock.

Members are specially requested to attend, when all suggestions and criticisms (if any) which have been received in writing seven days prior to the meeting will be discussed.

Will those who are desirous of assisting on the stand at the "Model Engineers Exhibition" please notify the Honorary Secretary as soon as possible.

The Competition Secretary is desirous of having the names of those who are prepared to loan exhibits for the stand as soon as possible, as space is limited.

The very unsettled weather and the fact that many of the members are on holiday affected the attendance for the competition at Wimbledon on Saturday, August 2. The high wind did its best to spoil the flying, but twenty members were undeterred by the unfavourable conditions and gave a good display. Two junior members, Messrs. Bianchi and Kimpton, handled their models in masterly fashion, and each succeeded in winning a competition. Mr. Shill was very busy tuning up a promising looking fusilage machine; the model had several nasty spills, but came out of them undamaged, thus proving soundness of construction.

Mr. Newell also brought out a new model, which caused great interest when put through its preliminary trial, its flying qualities were extremely good.

Fusilage Competition.

1. Master Kimpton.
2. Mr. Englefield.
3. Mr. Shill.

Spar Competition.

1. Master Bianchi.
2. Mr. Peters.
3. Mrs. Peters.

Mrs. Peters very kindly distributed the prizes to the winners.

Competition Secretary: T. Newell, 32, Veroan Road, Bexley Heath, Kent.

Hon. Secretary: A. E. Jones, 48, Narcissus Road, West Hampstead, N.W.6.

WIMBLEDON AERO CLUB.

The above club has been formed and includes in its ranks the oldest aero-modellists in the country. Flying meetings will be held every Saturday afternoon on its flying ground, Wimbledon Common, near the Windmill. The club is affiliated to the S.M.A.E., and a gliding section is to be formed, using only British-designed and built gliders.

All interested should write to the Hon. Sec., D. A. Pavely, 187, Replingham Road, Southfields, S.W.18.

Our Blue Air Mail Pillar Boxes

SPECIAL posting boxes have been erected in the City and West End of London for the reception of air mail correspondence only. These boxes, which are painted blue, have been available for posting since June 23, and are located at the following places:—

King Edward Street, E.C.1 (Outside G.P.O.); Outside Ludgate Circus Branch Post Office, E.C.4; Moorgate, E.C.2 (opposite Britannic House); Front of Royal Exchange, E.C.3; Outside W.C. District Post Office, High Holborn, W.C.; High Holborn, W.C. (South Side, opposite Staple Inn Buildings); East Strand, W.C. (near Surrey Street); Outside Charing Cross Branch Post Office, W.C.; Oxford Circus, W.1 (N.E. side); Piccadilly Circus, W.1 (opposite Pavilion Theatre); Victoria Station, S.W.1 (entrance to forecourt).

Additional boxes will be provided shortly at:—Charles Street, Haymarket, S.W.1 (front of Imperial Airways Offices); Outside Parliament Street Branch Post Office, S.W.1.

Merriam's Aviation Bureau

WE are asked to announce that Merriam's Aviation Bureau, which during the past four years has been carrying on good work at 64, Victoria Street, S.W.1, under the direction of our old friend and air pioneer, Capt. F. Warren Merriam, is now ready to cope more extensively with the demands made on its various branches, i.e., consultation, employment, agencies, etc. Larger offices and a more adequate staff have been acquired, and under new organisation improvements are being made which will be advantageous to both employers and employees, regarding which further announcements will be made shortly.

PUBLICATIONS RECEIVED

Aeronautical Research Committee Reports and Memoranda:
No. 1227 (Ae. 382).—The Wing Flutter of Biplanes. By W. J. Duncan, B.Sc. Sept., 1929. Price 3s. net. No. 1275 (Ae. 421).—The Interference of a Wind Tunnel on a Symmetrical Body. By C. N. H. Lock, M.A. Oct., 1929. Price 1s. net. No. 1277 (Ae. 423).—Stability Derivatives of the Bristol Fighter. By A. S. Halliday, B.Sc. Oct., 1929. Price 1s. net. No. 1281 (Ae. 427).—"Cornering" at High Speeds. By W. C. Jennings, B.Sc. May, 1927. Price 9d. net. No. 1284 (Ae. 434).—Pressure Plotting a Streamline Body with Tractor Airscrew Running. Part II.—Airscrew in Rear Position. By C. N. H. Lock, M.A., and F. C. Johansen, B.Sc. Sept., 1929. Price 1s. net. No. 1291 (Ae. 440).—Some Generalised Curves for the Accelerated Motion of an Aeroplane. By H. Glauert, M.A. Nov., 1929. Price 9d. net. No. 1294 (Ae. 443).—Centre of Pressure Travel of Symmetrical Section at Small Incidence. By F. B. Bradfield. Dec., 1929. Price 9d. net. No. 1295 (Ae. 444).—Maximum Lift Coefficient of "Starling." With Clark YH Wings. By R. P. Alston, B.A. Dec., 1929. Price 3d. net. No. 1301 (Ae. 435).—Experimental Comparison Between a Series of Turns of Different Diameter on a Gloster IV Seaplane. By J. K. Hardy, B.A. Nov., 1929. Price 6d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

League of Nations: Armaments Year-Book. Sixth Year. 1929-1930. League of Nations, 16, Northumberland Avenue, London, W.C.2. Price £1.

Report on the Progress of Civil Aviation: 1929. Air Ministry, Directorate of Civil Aviation. H.M. Stationery Office, London, W.C.2. Price 4s. 6d. net.

Official Gazette of the United States Patent Office, June 24, 1930. Department of Commerce, U.S. Patent Office, Washington, D.C., U.S.A. Price 25 cents.

The Weather Map. Air Ministry, Meteorological Office. H.M. Stationery Office, Kingsway, London, W.C.2. Price 3s. net.

My Case for Empire Free Trade. By Lord Beaverbrook. The Empire Crusade, 402, Grand Buildings, Trafalgar Square, London, W.C.2. Price 6d.

Manual of Air Pilots. Air Publication 1234. H.M. Stationery Office, London, W.C.2. Price 3s. 6d. net.

The Aero Club of South Africa Year Book, 1930. Aero Club of South Africa. P.O. Box 6033, Johannesburg, S. Africa.

AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors. The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

APPLIED FOR IN 1929

Published August 7, 1930

- 10,794. E. B. CARNS. Aircraft, etc. (331,830.)
10,843. DORNIER-METALLBAUTEN GES., and Dr. C. DORNIER. Seaplanes. (313,435.)
10,917. F. R. HARDINGE. Clinometer for aircraft. (331,857.)
12,657. G. H. F. BERGLUND. Gyroscopic device. (331,956.)
13,735. G. H. F. BERGLUND. Gyroscopic compasses. (331,972.)
22,847. O. KRELL. Apparatus for mooring airships on water. (316,554.)
24,264. R. H. JARRETT-KNOTT. Vertical screw for use on aircraft. (332,088.)
24,265. R. H. JARRETT-KNOTT. Propelling-means for aircraft. (332,089.)
28,039. M. J.-B. BARBAROU. Connecting rods of engines with radially arranged cylinders. (332,126.)
28,182. L. BLERIOT. Aerial signalling devices. (332,128.)
28,565. R. P. PESCARA. Direct-acting i.c. air-compressors. (332,131.)
33,873. G. A. M. LAMBLIN-PARENT. Searchlights for aircraft, etc. (332,163.)

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